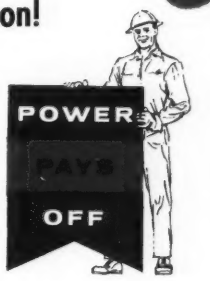
CALIFORNIA
OIL WORLD
COVERING: New Mexico • California • Wyoming • Montana • Colorado • Idaho • Utah • Western Canada
ONCE MONTHLY • SECOND ISSUE • MAY 1959 • Vol. 52 • No. 10

JUN 17 1959
ENGINEERING LIBRARY

new BJ Power Sucker Rod Tong

Previewed at Tulsa . . . available soon!



Hydraulic powered for fast, powerful make-up and break out of all rod sizes. Delivers up to 1500 foot pounds torque. Integral back up wrench with quick change of sizes using simple push-pull pin action. Uniform make-up assured by torque gauge control. Quick on-and-off—new "swinging door" gate eliminates hand latching or unlatching. Safe one-man control. Unitized jaw assembly fits 5/8", 3/4" and 7/8" rod sizes *without change* . . . allows fast, unitized jaw change for other rod sizes and macaroni tubing. Single master control for speed and forward or reverse action with tandem handle feature for right or left hand operation.

Only BJ Offers a Full Line of Power Tools!

ABOVE: Slow, hard hand methods can also damag rod thread couplings.

LEFT: BJ Power Tong does the job quick, safe and sure!

Torque Rating
(at 2,000 psi)
1,500 ft/lbs

Speed
85 rpm to 750 ft/lbs
42 rpm from 750 to 1,500 ft/lbs

Power Requirements
25 gpm to 1,000 psi
12 gpm from 1,000 to 2,000 psi

BJ
SINCE 1872

Byron Jackson Tools, Inc.
A SUBSIDIARY OF BORG-WARNER CORPORATION
P.O. Box 2017A, Terminal Annex • Los Angeles 54, California

H C Smith
OIL TOOL CO.
Branches in Principal Oil Centers
Throughout the World

COMPTON, CALIF. • ODESSA • HOUSTON • DALLAS • OKLAHOMA CITY • GREAT BEND • EDMONTON

CALIFORNIA
OIL WORLD

PUBLISHED TWICE A MONTH
By
PETROLEUM PUBLISHERS, INC.

KINZIE MILLER—President and Editor • RICHARD SNEDDON—Contributing Editor
LELA MONROE—Vice President • LARRY O. MILLER—Secretary and Advertising Manager
2404 WEST 7th STREET, LOS ANGELES 57, CALIFORNIA • DUnkirk 2-6218
BRANCH OFFICES
CHICAGO—FRED JONES & SON—Room 517, 205 W. Wacker Drive, Chicago 6
CLEVELAND—HOWARD F. McCLENAHAN—1900 Euclid Avenue, Cleveland 15
NEW YORK—THE McKEOWN COMPANY—342 Madison Avenue, New York 17

AUDITED PAID CIRCULATION ABC

• SECOND ISSUE
MAY, 1959
VOL. 52 • NO. 10
WHOLE NO. 2016
May 31st, 1959

California Oil World is published twice a month at 2404 West 7th St., Los Angeles 57, California. Second-Class Postage Paid at Los Angeles, California. Subscription price $1 per year in U. S. and possessions, $2 in foreign countries including Canada.

Oil Industry Honored for Junior Achievement Leadership

The president of a little home-grown company which showed a net profit of $97 last year paid tribute recently to the U. S. petroleum industry, whose assets and facilities run into the billions of dollars.

The oil industry was honored for its long-term participation in the nationwide Junior Achievement program dedicated to youthful enterprise. The award was particularly pleasurable for oil since it is celebrating its Centennial Anniversary this year—100 years of petroleum progress.

More than 1,000 persons voiced enthusiastic approval in the Sheraton-Dallas hotel as 18-year-old George Corfino, of Los Angeles, formally presented the Industry Achievement Award to Frank M. Porter, president of the American Petroleum Institute, New York.

The ceremony highlighted the national Junior Achievement Future Unlimited Banquet, and marked only the second time in postwar years that Junior Achievement had publicly saluted an entire industry for cooperation and encouragement.

Corfino, Junior Achievement's President of the Year, is an outstanding example of the program. His little firm manufactured and sold ceramic mugs. He had 15 other youngsters working for him in this miniature showcase of competitive capitalism at work.

Edwin H. Mosler, Jr., President of Junior Achievement, Inc., told a packed house at the Sheraton-Dallas hotel that "the petroleum industry has played a major part in the national development of the Junior Achievement program and continues in the forefront of Junior Achievement leadership. Petroleum's continued wholehearted support of Junior Achievement must be a source of inspiration to all who are concerned with the economic philosophy of our youth."

Mosler pointed out that during the past year alone "executives in the petroleum industry, acting as advisers to Junior Achievement companies, spent in excess of 52,000 man hours indoctrinating youth in the principles of free enterprise." He went on to say, "This most certainly is a massive example of how the petroleum industry and youth have become partners in progress through Junior Achievement."

Accepting the award on behalf of the industry, American Petroleum Institute President Porter said that Junior Achievement "is an endeavor that rates as the soundest possible investment for private enterprise." Porter went on to say that America will remain great "as long as enough Americans understand and believe in this system of ours. In the oil business we have our dry holes, thousands of them every year. Every other business has its hazards. Nobody is guaranteed anything except a chance to try. But having that chance means everything — the dignity of freedom, the decency of living in a country where there are organizations like Junior Achievement with volunteer businessmen to show you the way and help you get started right."

He continued, "There is always the danger in America that we will take our freedom for granted—that we will consider it an inseparable part of the land like the Rocky Mountains or the Mississippi River. But, of course, the freedom that has blossomed here so brightly could be blighted by the negligence of one generation. And that we must avoid. We must constantly keep in mind the value of this freedom."

Mr. Porter's acceptance talk was the principal address of the evening.

Top executives from the petroleum industry representing the board of directors of the American Petroleum Institute and oil interests throughout the southwest attended the banquet and were introduced to the thousand-plus guests.

Under the Junior Achievement program of business education teenage high school students form miniature companies, float stock, and manufacture and sell a product or service. 3,842 of these small-scale businesses operated in the United States during the past year.

These part time enterprises were honored in over 100 cities from coast to coast at local Future Unlimited Banquets. The national banquet in Dallas was this year's focal point for a Junior Achievement banquet table which figuratively is set from Maine to San Diego.

Petroleum LORE and LINGO

By RICHARD SNEDDON

Saturation

When an economist tells us that the market for some particular commodity is saturated, he means that it can no longer absorb any of that commodity. The word saturated comes from the Latin *satur*, signifying "full of food" "no longer hungry," or "sated" as this condition is commonly known. Saturated hydrocarbons are like that. They are a state of complete satisfaction. That is to say, they have no free bonds —no more combining capacity— and hence are no longer inclined to reach out and ally themselves with stray radicals. Under certain specially contrived conditions they can be forced to release one or more radicals and take on new ones but, like small boys mowing lawns, they only do so when compelled. Unsaturated hydrocarbons, on the other hand, are always avid for new companionships, and given any kind of opportunity will brazenly take to themselves additional radicals, sometimes even stealing them from other compounds, in order to gratify their fitful longings. From all of which it may be properly inferred that saturated hydrocarbons are more stable than unsaturated ones, and since stability is obviously an important requisite in many industrial products, for example, lubricating oils and greases, the value of the saturated hydrocarbons becomes immediately apparent.

Basic Formulas

The basic lingo of the chemist is passibly easy to resolve into understandable terms but one occasionally runs into bits of wordage that are anything but easy to translate. It has been observed that the paraffins are a family of saturated hydrocarbons, ranging from light gases to solids, and perhaps it is time now to show why they are all regarded as being of the same species although they differ markedly in various respects. To begin with, the composition of every member conforms to a specific mathematical formula, $C_n H_{2n+2}$; and to fully comprehend what that means, all you require in your repertoire of talents is the ability to perform simple addition. The formula merely indicates that in any paraffin hydrocarbon, the number of hydrogen atoms present is twice the number of carbon atoms, plus two. For example if you substitute 1 for the n, the formula would be $C_1 H_{2+2}$ which is CH_4; if you substitute 15 for the n, the formula would be $C_{15} H_{30+2}$, or $C_{15} H_{32}$; and so on, we don't quite know how far. Another identifiable feature of the paraffins is that their carbon atoms are arranged in straight or open chains and are always linked to each other with single bonds. That will be explained more fully presently, meantime it may be advantageous to learn some other aspects of classification.

Nomenclature

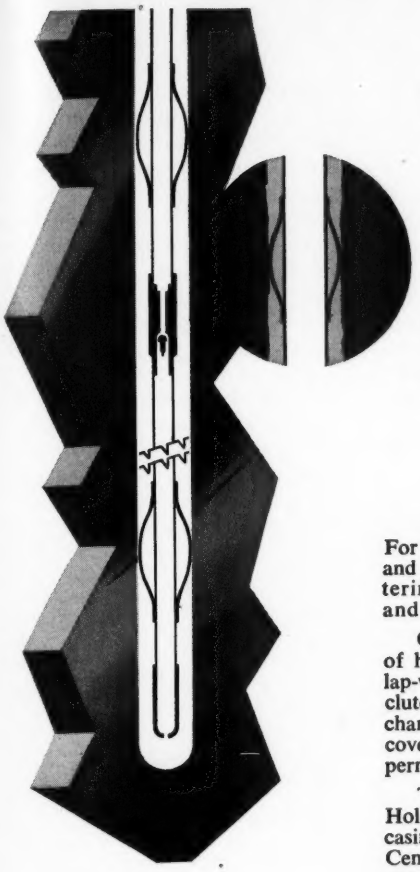
The names of the various hydrocarbon families are characterized by distinctive endings, that of the paraffins being —ane which as nearly as we can learn is just an arbitrary suffix, chosen to designate the series. This ending is like the English surnames, Smith, Jones, or Thompson. It identifies its owner as a member of a family but does not tell which member. This is the function of the prior syllables, and in most instances they do it very well. However, unfortunately, the first four members of the paraffin family have names, the origin of which are far from clear. They are methane, ethane, propane, and butane; they contain 1, 2, 3, and 4 carbon atoms, respectively; and they are all gases at atmospheric temperature and pressure. "Mth-" is from the Greek *methy-*, "a spirit" which was normally coupled with another word, *hyle*, meaning "wood" so together they were the equivalent of our "wood alcohol." That will sound a little more logical if we coincidentally remember that one of the scientific names of wood alcohol is "methanol."

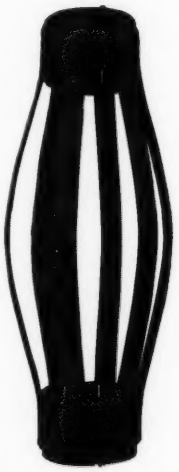
Fats and Waxes

"Eth-," the first syllable of "ethane" is believed to have come from the Greek *aither*. This eventually became our common noun "ether," which we use to designate "the rarefied element that fills the outer reaches of space." Propane was perhaps at one time thought to be the lightest of the paraffins, for it seems to have taken its name from the Greek prefix *proto*, "first" and *pion*, "fat." This is not because there is anything resembling our conception of fat in propane but because the paraffins are also known as aliphatic compounds, from the Greek *aleiphatos*, "fat or oil." The latter is a general classification containing all the compounds that either are, or are related to, fats and oils. As we know, many lubricating oils and greases are produced from the paraffins, and the gases referred to are legitimate members despite their seemingly unfatty character. *Butyrum* is another word popularly used by the Greeks for waxes, fats, and any compound of buttery consistency. It actually means "butter" and from it comes the name "butane" which in itself is not buttery but still is a member of the family that includes many products of butter-like consistency.

Searching the Archives

In chasing down the origins of petroleum language we run across occasional ones, like those just mentioned, that are rather obscure and not too convincing, but most of our lingo is capable of easy and interesting resolution. The remainder of the paraffins, for example, those from C_5 to C_{60} or more, all take their names from Greek or Latin numerals that indicate the number of carbon atoms in each molecule. The first few are pentane, hexane, butane, octane, nonane, and decane, which are from Greek *pente*, "five;" *hex*, "six;" *hepta*, "seven;" *okto*, "eight;" *nonus* (Latin) "ninth," and *deka*, "ten." Above that you get such oddities as tetracosane which has 24 carbon atoms in the molecule and gets its name from the Greek for that number; and penta— triocontane which





S-3 CASING CENTRALIZER.

BETTER DOWNHOLE CEMENT DISTRIBUTION

WITH

HALLIBURTON CASING CENTRALIZERS

because... Halliburton Centralizers are designed by *Cementers* for better cementing jobs. With more than 2 million job experience *Halliburton Cementers* know what it takes for more successful cementing.

For unobstructed circulating of cement in annulus and better bonding to both pipe and formation—Halliburton "S-3" Casing Centralizers give maximum casing centering efficiency at even the most critical point—extreme hole deviation and casing deflection.

Other advantages with the "S-3" Centralizer... centralizer springs designed of heat treated spring steel to withstand punishing down-hole conditions—lap-welding of springs to end band reduces breakage and side hole damage—no clutching or gripping to casing while rotating or reciprocating—helps prevent cement channeling—better overall well completions... one size centralizer designed to cover a range of hole sizes for each O.D. casing size from 4½" to 24" O.D.—permits ease of ordering.

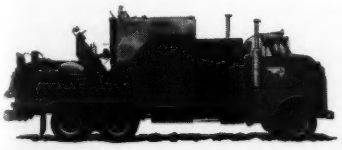
There is a Halliburton Casing Centralizer designed for every well..."Slim-Hole" Centralizers are tailored for specific slim holes drilled or for liners run inside casing; available in 3½" O.D. liner through 9⅝" O.D. casing sizes..."Tubing" Centralizers help protect tubing and collars against wear when string is pulled and re-run; also for wells where tubing is used as production string or in water injection wells for maximum centering and better placement of cement; available in 2" EUE through 3½" EUE sizes.

- **HALLIBURTON LIMITING DEVICES... NON-WELD**
  for superior load-carrying capacities.

- **VISE-LOK LIMIT CLAMP**
  —new method for positioning centralizers on casing at selected spacing—special file hard steel teeth on gripping slips provide the holding power up to 20,000 lbs. loading—eliminates harmful welding on casing.

- **SOLID SET SCREW LIMIT RING**
  ...surpasses many non-weld limiting devices and stop collars in capacity load to limit movement of centralizers on casing without welding—not illustrated.

For better cementing... use Halliburton services and Casing Centralizers... and for more dependable and economical installations under varying well conditions use Halliburton Vise-Lok Limit Clamp or Solid Set Screw Limit Ring... a combination that pays off! Try the advantages of these cementing tools on your next cementing job... Your Halliburton Representative is as near as your telephone or shortwave radio!



HALLIBURTON CEMENTING SERVICES

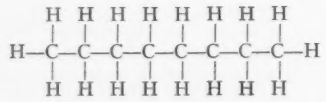
HALLIBURTON OIL WELL CEMENTING COMPANY • DUNCAN, OKLAHOMA

284 SERVICE CENTERS – JUST MINUTES AWAY FROM YOUR WELL

boasts 35 carbon atoms and derives its name in the same way.

Straight Chains

By this time the analytical student is probably wondering why in saturated hydrocarbons the hydrogen atoms are not always present in multiples of four. This is because in the building up process the carbon atoms become linked to each other in either a straight or open chain sequence. Let us take a look at one of the better known paraffins-octane. We have just learned that octane is the eight carbon member of the series, so remembering the basic formula $C_n H_{2n+2}$, we substitute 8 for the n, and we find that octane has the formula $C_8 H_{16+2}$, or $C_8 H_{18}$. Now putting that down graphically, we get:



Satisfied Bonds

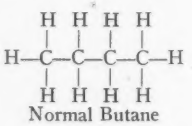
Note how the carbon atoms are linked in a straight chain, and note also that there are no unattached bonds, so the compound is thoroughly saturated. This is normal octane and any time you see a graphic formula like this in which all the carbon bonds are attached to hydrogen atoms, and the carbon atoms are linked to each other by single bonds only, then you are looking at a saturated hydrocarbon. Although the graphic formula is largely a theoretical device, it provides the chemist with logical explanations for so many actions and reactions, between substances, and so much support for the fundamental laws of chemical quality and behavior that for all practical purposes they can be assumed to be a correct visualization of molecular structure. No one has ever had a good look at an atom or a molecule. In the first place, the little beggars just won't stay still . . . they are in a constant state of movement which is more or less violent, depending on their nature, so that it would require an extremely fast movie camera to record their perambulations. In the second place, they are so small that even the electron microscope which can magnify 12,000 times, and whose image can be further magnified by photographic enlargement, still can't bring them into focus. However, so far, the mental conceptions of atomic and molecular form have fitted our scientific projections and conclusions with remarkable accuracy.

Open Chains and Isomers

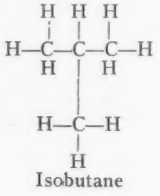
Continuing now on the hydrocarbon families, it has been shown that the normal paraffins consist graphically of straight chains of carbon atoms, with side and end bonds completely taken over by hydrogen atoms. It would simplify our grasp of the entire situation if the paraffins were consistent in this respect, but they are not. Beginning with pentane the chains can branch out to the side without changing the number of atoms or other elements that are present but sometimes imparting valuable new qualities to the structurally changed products. Such a product, known as an isomer, from the Greek *iso*, "same," and *meros*, "part," can no longer be classed as a straight chain hydrocarbon, but still remains in the open chain category.

How Isomers Form

The significance of the open chain will be appreciated more fully a little later when we discuss closed chain, or cyclic structures. In the meantime, it should be made clear just how an isomeric form develops. Normal butane ($C_4 H_{10}$), it will be remembered, is a straight chain paraffin, but a secondary product is formed by side branching. This is known as isobutane and although it has the same number of carbon and hydrogen atoms in its molecule, their changed arrangement invests it with some quite different qualities. Here are the graphic formulas of the two compounds:



Normal Butane



Isobutane

Detonation Suppressors

Pentane has two additional isomers, hexane has five, and so on. The greater the number of carbon atoms in the molecule, the more are the possible isomers. One that has achieved great fame is iso-octane. There is no need to depict it graphically now that we have some idea of the process, but iso-octane is the liquid that has provided us with a means of measuring the anti-knock qualities of gasolines, in other words, their octane numbers. (It should properly be their iso-octane numbers). It is peculiar that while iso-octane has a suppressive effect on what in an automobile engine was formerly known as a carbon-knock, heptane, the next lowest number in the paraffin series is of no help whatever in subduing the detonation affect. If you happened to be riding in a high compression car, fueled with hexane, you would probably feel as if you were inside a boiler with the welders still working on it.

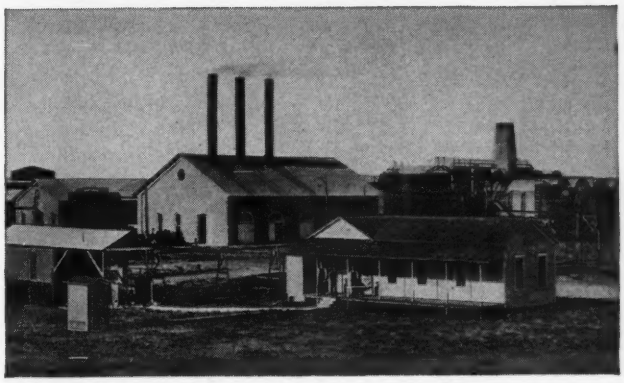
More Anti-Knock Stuff

In actuality the octane number of a gasoline is its knock rating equivalent in terms of an iso-octane-heptane blend. If it knocks to the same degree as a blend of 90 per cent iso-octane and 10 per cent heptane it has an octane number of 90. If it is equivalent in octane rating to an all iso-octane fuel with no admixture of heptane, it has an octane number of 100. It is quite possible to have an octane number in excess of 100 because, (1), some day we shall find a test liquid with a better anti-knock rating than iso-octane; (2) it is already possible by means of additives to boost the octane number of iso-octane; and (3), measurement is rapidly becoming less dependent on special test fuels and more on mechanical measurement of the various detonation effects. One last word for now about the paraffins before we go on to the next family of hydrocarbons. The first four members are gases at ordinary temperatures and pressures; the next twelve members are liquids; and after that they are semi-solids of various consistency, or true solids.

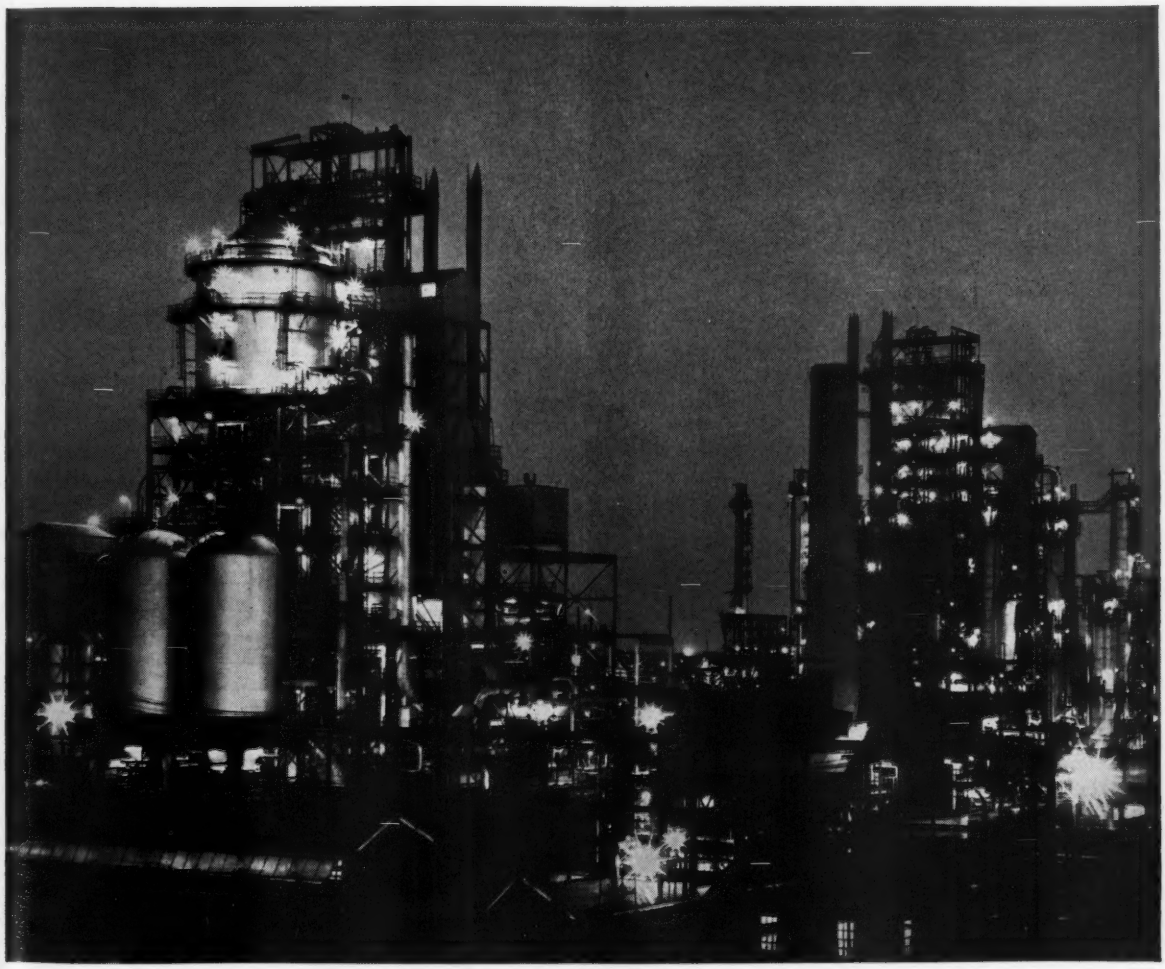
The Offensive Olefins

The next hydrocarbons to be discussed in connection with petroleum are the olefins. As already remarked, they are a smelly lot, but they are good anti-knock components and they are not only present to some extent in nearly all petroleum oils, but are also present in even larger concentrations in many of the distillation products of crude oil. Each olefin contains two fewer hydrogen atoms than are found in the corresponding paraffin, so somewhere in the structure there must be a double bond. All members of this family have the characteristic "-ene" ending which is added to the paraffin radical, and the first being ethylene, it is easy to guess that it comes from ethane. If we take a molecule of ethane

Two views of progress . . . 57 years apart



YESTERDAY. Texaco's first refinery at Port Arthur came into being in 1902 to turn the black crude oil — newly discovered in quantity — into useful products for mankind. Produced in simple stills, the first products were kerosine, naphtha, asphalt and primitive lubricants.

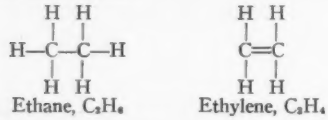


TODAY. At Port Arthur, and at 11 other major Texaco refineries in the United States, ultra-modern chemical wizardry uses many methods to produce constantly improved gasolines, perfected lubricants, and a myriad of other petroleum products. Because these products are so vastly improved, you can drive a more powerful car — jet planes can fly faster and farther — industry can operate more efficiently. And because it has constantly planned ahead, Texaco's growth has been continuous.

TEXACO

. . . CONSTANT PROGRESS
IN OIL'S FIRST CENTURY

and remove two hydrogen atoms here is what happens:



Ethane, C_2H_6 Ethylene, C_2H_4

Double Bonds and Stability

Observe here the double linkage between the two carbon atoms. That is the sign of an unsaturated and less firmly knit together hydrocarbon. Unsaturates may exhibit double or triple bonds but a carbon atom is never linked to another by four bonds. The olefins as indicated are relatively unstable and readily take up more hydrogen or other radicals to form new compounds. They thus have the distinct disadvantage of picking up wrong companions if their tendencies are not properly controlled, and developing products that at the moment are not desirable. On the other hand, they have good anti-knock qualities, and their very promiscuity makes them ideal as the starting bases for an inexhaustible list of synthetic commodities. Incidentally, we have here the definition of two methods that are of great importance in petroleum refining.

Building Up and Tearing Down

When an olefin or other unsaturated hydrocarbon is made to combine with additional hydrogen atoms the process is known as hydrogenation. When the reverse takes place and a hydrocarbon is made to give up one or more of its hydrogen atoms the process is called dehydrogenation. The olefins are also a large family, ranging from light gases to comparatively dense solids. The first three members of the family are ethylene, propylene, and butylene which, of course, take their names from the corresponding paraffins. They are gases. The next eleven or twelve are liquids and the remainder are solids. Further along on the list which advances one carbon atom at a time we find octylene, C_8H_{16}, and hexadecylene, $C_{16}H_{32}$. They all conform to the standard formula, C_nH_{2n}, and, like the paraffins they do have isomeric variations. The weak point in their structure is the double linkage and their eagerness to rid themselves of this and attach themselves to other free bonds is the reason that they are such excellent building blocks for the constructive adventuring of the chemist and refiner.

The Di-Olefins

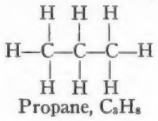
There is a family of unsaturates known as di-olefins because they feature two double bonds, and that di- prefix is from the Greek *dis,* meaning "twice." An example of this type is allene, the formula of which is $CH_2=C=CH_2$. The members of a second group, known as the acetylenes, exhibit triple bonds. This family is named after acetylene, its lowest member, whose formula is $H-C\equiv C-H$. The name is derived from acetyl, the acetic acid radical (CH_3CO^-), which in turn takes its name from the Latin *acetum,* "vinegar." Acetic acid is, of course, the principal component of ordinary wine or apple vinegar. These are not the only unsaturated hydrocarbons that occur in petroleum and its products. There are a number of others but it is not necessary that we know them all. The important thing to realize is that there *are* such compounds and that their stability is in inverse proportion to the number of bonds by which the carbon atoms in their structure are linked.

Polymerization

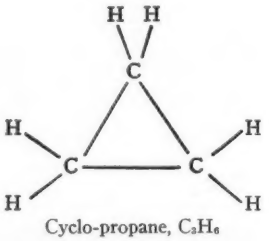
They seem to be constantly striving to reach a state of saturation like their paraffinic cousins. They exist therefore, in a perpetual state of anxiety for company, so that even when there is nothing around to satisfy their eager bonds, they engage in a species of internal unionization, called polymerization. This is from the Greek *polys,* "many," and *meros,* "a part," and simply means that they unite their comparatively light molecules to form heavier ones. Controlled, this sort of thing is good, as in the refinery; uncontrolled, it is bad, as in an automotive engine. We have learned so far of hydrogenation, dehydrogenation, isomerization, and now we have just added the word polymerization to our vocabulary. These are all tools that the refiner puts to good use in fashioning the products of crude oil to the multiple uses of a growingly demanding economy.

Closed Ring Compounds

There temporarily we can leave straight and open chain hydrocarbons and devote some attention to another species termed cyclic or closed-ring compounds, for reasons that will soon become apparent, when we see their graphic formulas. The naphthenes, like the paraffins, are also saturated and because of that fact, and despite their different type of structures, they too are stable and steadfast, and have none of the philandering instincts of the fickle olefin tribes. They are sometimes called cycle paraffins and their names are devised by placing the hyphenated prefix cyclo- in front of the corresponding paraffin title. Here, just to convey the idea, are the three-carbon paraffin, propane, and cyclo-propane, the first of the naphthenes, in graphic form, for the purpose of comparison:



Propane, C_3H_8



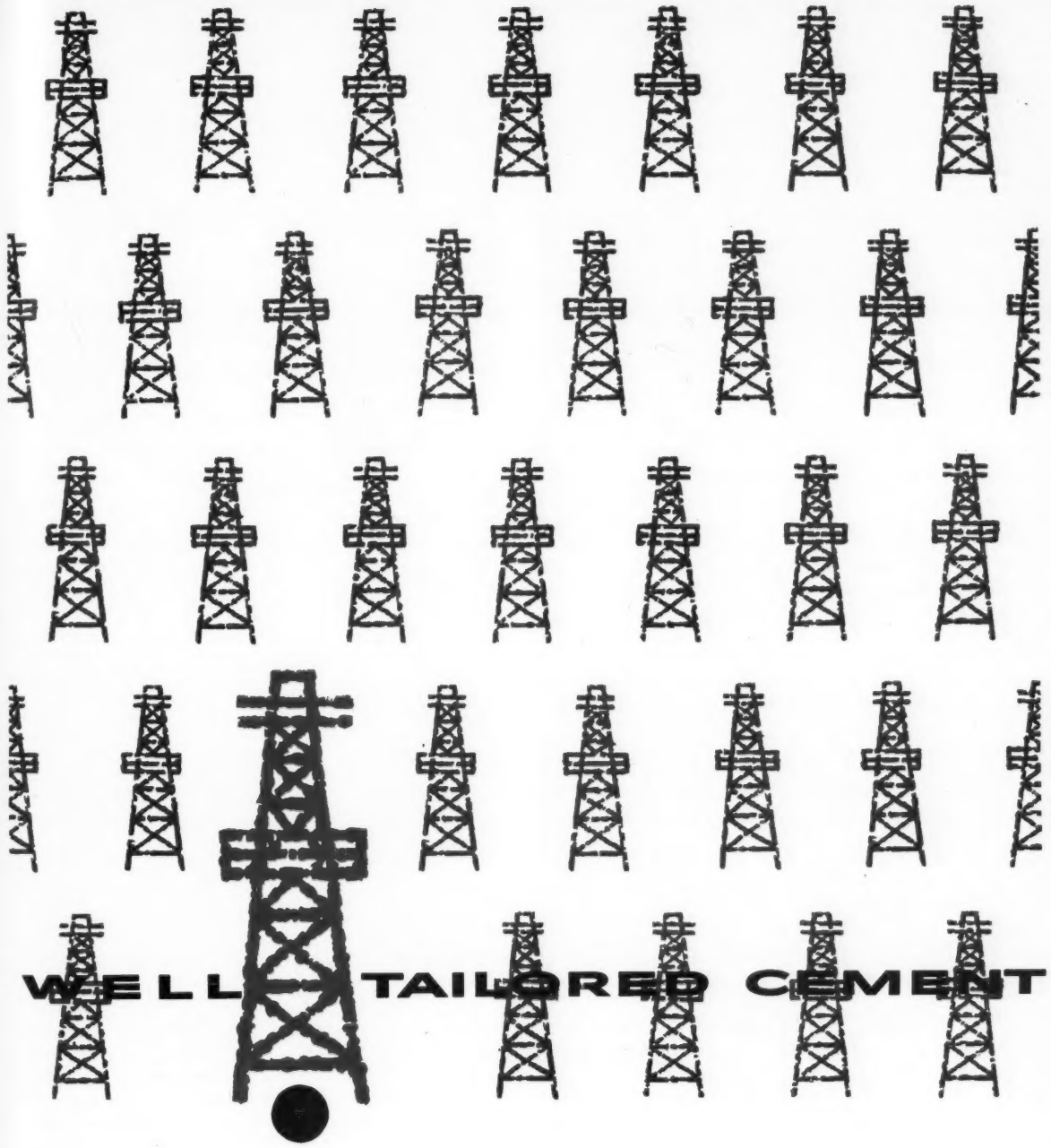
Cyclo-propane, C_3H_6

More Saturates

The distinctive characteristic of the naphthenes is that the carbon atoms are always bonded so that they form one or more closed rings, and it is obvious that they must have at least three carbon atoms to accomplish this, so the list starts with its C_3 member, cyclo-propane, C_3H_6. This is another large family and some of its members are present in all or nearly all petroleums. They are very much like the paraffins in both physical and chemical properties, but peculiarly enough, although they have the same number of carbon and hydrogen atoms as their corresponding olefins, they are higher in gravity. This would seem to disprove the Euclidian postulate that "things which are equal to the same thing are equal to one another," and should certainly teach Mr. Euclid to be a little more cautious in his public pronouncements. The naphthenes, of course, also have a basic formula like the other hydrocarbon families. It is a trifle more complex than those we have already discussed. It is $C_nH_{2n-6}+H_6$, and don't let that frighten you, for it is still just an expression in simple arithmetic. If you want to know the naphhene that corresponds to butane, for instance, which contains 4 carbon atoms, substitute 4 for the n, and you come up with $C_4H_{8-6}+H_6$. Add the like terms and you have C_4H_8 which is the formula for cyclo-butane, but don't ask me why the scientists didn't just decide the basic formula to be C_nH_{2n} and let it go at that.

The Aromatics

There is just one more family of cyclic hydrocarbons with which we should be to some extent familiar in



Whatever your well conditions—any depth, pressures to 20,000 psi or temperatures to 400°F—there is a Permanente Cement for the job. All types are available for "right now" delivery.

KAISER Permanente CEMENT

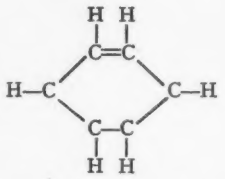
PERMANENTE CEMENT COMPANY

Oakland • Los Angeles • Portland • Seattle • Pasco • Anchorage • Fairbanks • Honolulu

order to enjoy the fullness of petroleum life, that is the aromatics, sometimes known as the benzene series, again because benzene is the initial member. The molecular structure in this case is much more complex than any we have encountered up to the moment and I seem to remember that I was told in one of my chemistry classes at school about how the structure of benzene had been a great puzzle to chemists for years, until one Friedrick August Kekule von Stradonitz had a dream. Kekule was a German scientist with a great interest in the constitution of organic chemicals. Incidentally, there are two distinct branches of chemistry, inorganic and organic. Inorganic originally related only to inanimate things, like metals, soil substances, water, air, etc., and organic was supposed to be concerned only with living organisms such as plants, animals and particularly their carbon compounds. In the meantime, however, they have overlapped so greatly that it is often hard to tell which is which and it seems to me that the distinction should be abolished. Anyway, the chemistry of petroleum falls in the organic category since it is believed to result from the decomposition of the remains of marine animal and plant life.

What Kekule Discovered

You are no doubt by this time gasping to learn what Kekule dreamed up that made him so popular with the scientists of his day. Well, the graphic formula he came up with to explain all the eccentricities of benzene was a hexagonal affair like this:



It was these alternate double bonds that brought his final conception into accord with the valency and other fundamental laws that govern chemical behavior. It is no wonder, thus, that the entire brethren of brewers and compounders voted him an Oscar, for his discovery led to a new understanding of the aromatic family which has since become of inestimable aid to industry and society.

A Closer Look

The basic formula of the aromatics is C_nH_{2n-6}, and since the graphic formula is hexagonal in form (Greek *hex,* "six," and *gonia,* "an angle") it requires at least six carbon atoms to start the series. The first few members are benzene, C_6H_6; toluene C_7H_8; xylene C_8H_{10}; and mesitylene C_9H_{12}; and the list goes on a long way. These hydrocarbons and their derivatives are found in nearly all crude oils and being unsaturated, (viz the double bonds), are also prime building material from which the chemist and refiner can fashion useful products of endless variety. They are mostly good anti-detonation agents for fuels and, indeed, before the automotive testing laboratories got around to blends of iso-octane and heptane, benzene and what was then known as "straight-run" gasoline, in various proportions, were the test standards and benzene itself was the ultimate. Straight-run gasoline was that which was distilled from a certain type of crude oil, without the inclusion of additives and with none of the present day methods of technological improvement.

What of the Future?

There are other families of hydrocarbons and other chemical substances found in petroleum, or formed during its refinement. Each is important in its place and will be touched upon where necessary. Chemists have a multiple function to perform in the affairs of the petroleum industry. The analyses of the raw crude; the control of methods that are currently employed; the testing of the products that result from these methods for adequate quality and effectiveness; and, finally the pointing of the way to new methods and new products for an unpredictable future. We are now into the age of atomics and the laboratory is overrun with nuclear physicists, electronics engineers, and space-time scientists. The long prevalent methods of wet analysis, and evaluation of volatile liquids by fractional distillation, carried on by individual chemists, are gradually being rendered obsolescent by mass spectrometers, emission spectrographs, and a long line of weird but effective devices that can be included under the general classification of automation.

More West Coast Companies To Participate in Oil Congress

Gerald Fisher, General Petroleum Corp., will present a paper at the Fifth World Petroleum Congress, May 30-June 5 in New York City, titled "Air Pollution Prevention Through Design and Operation." The paper was prepared by L. A. Castler, Fisher, and F. A. Manley. J. G. Schaafsma also will attend the Congress.

Richfield Oil Corp. reports the following of its people are planning to attend: David E. Day, L. K. Cheney, R. P. Corlew, C. A. Day, W. F. Deeter, L. M. Richards, L. F. Strader, J. R. Williams, H. C. Zweifel, M. L. Natland, Mason L. Hill, John S. Loofbourow, Jr., and Gerald E. Knowles. Mason Hill is co-chairman of the section on geology.

From California Research Corp., San Francisco, there will be: A. L. Lyman, W. H. Claussen, J. L. Cooley, R. F. Faull, W. H. Shiffler; from Cal Research, Richmond, B. A. Fries, D. Godfrey, I. E. Levine, M. H. Paulson, and W. G. Toland, Jr.

Godfrey will present the paper, "Effects of High Temperature on Friction and Wear," and Fries will present the paper, "A Novel Approach to Control of Separation Processes Using Radioisotopic Compounds." Papers also will be presented by N. B. Guyol of the economics department on "The Role of Petroleum in World Energy Supplies," and Elizabeth Roth of the library staff on "Sources of Statistical Information for the Petroleum Industry."

From Standard - Western will be George A. Davidson, Fred Powell, J. T. Higgins, W. J. McLeod, W. H. Hales, and R. K. Paine. From the California Oil Co., E. E. Wall, C. E. Allen, E. J. Karle, J. H. Williams, W. R. Forsythe, J. E. Walkey, and R. E. Thurn. T. G. Hughes will represent the Oronite Chemical Co.

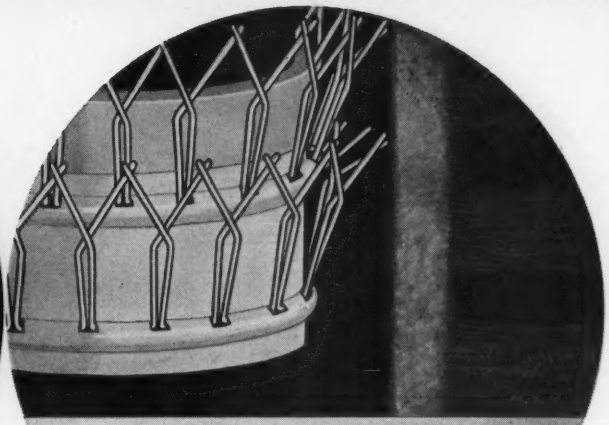
Papers to be presented at the Congress by research department personnel of the Union Oil Co. of California are "Hydrogenation of Petroleum Fractions," authored by W. E. Bradley, manager of refining research; G. W. Hendricks, supervisor of process research; H. C. Huffman, supervisor of product research, and A. E. Kelley, manager of process engineering research. Also, "Oil Shale . . . Energy for the Future," by Fred L. Hartley, vice president, research, and Claude S. Brinegar, supervisor, economics and planning.

FOR LEASE

Oil Gas Rights close to Stensvad Field. Rosebud County, Montana. Twp. 12N - 31E Section 35, 640 acres. Send bids to Walter A. Ross, 626 W. Caldwell St., Compton 3, Calif.

BAKER CONTROLLED SCRATCHING

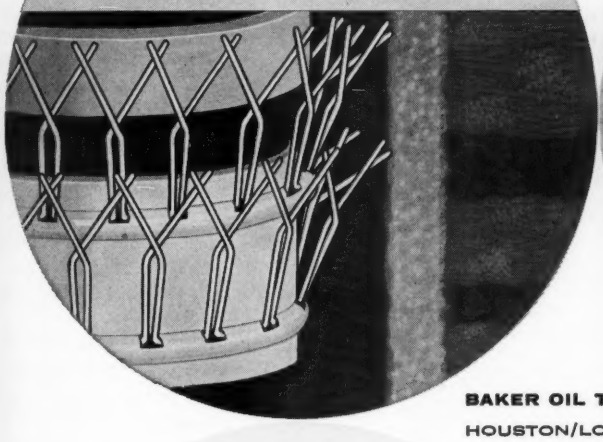
OFFERS MORE THAN EFFECTIVE MUD CAKE REMOVAL



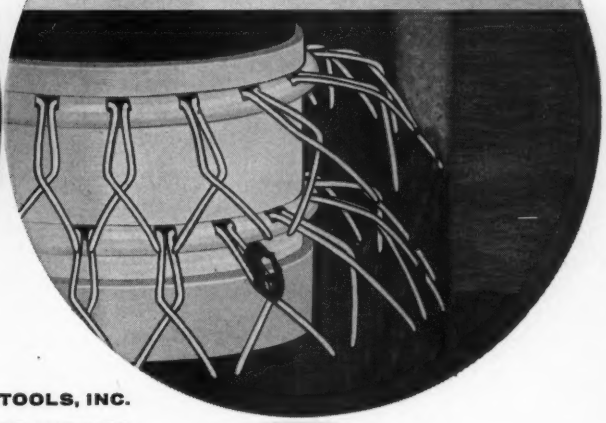
When the casing is being lowered, the scratcher wires swing freely upward and do not remove mud cake which can plug the annulus and cause dangerous pressure surge build-up.

BAKER

After reaching the area to be cemented, the hinged scratcher wires extend to contact the wall of the hole. and when the casing is reciprocated...



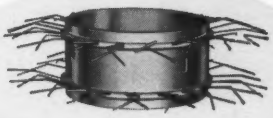
...scissors-like operation of the overlapped wires—over the full circumference of the well bore—effectively removes the mud cake which is circulated safely out of the hole.



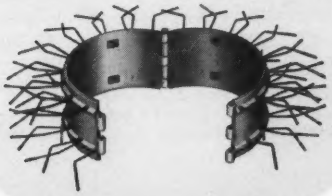
BAKER OIL TOOLS, INC.
HOUSTON/LOS ANGELES
NEW YORK

Controlled Scratching not only means more effective mud cake removal for a better cementing bond, but protects against destructive pressure surges while running casing. Baker Scratchers supplement the pressure-reducing performance of Baker FILL-UP Equipment, and the superior centering action of Baker Casing Centralizers, to provide *more* than a good cement job.

The Baker representative, and your supply store are ready to serve you.



Baker Wall Scratchers are available in the "Solid-Ring Type, (Product No. 901-C) which are slipped *over* the casing; and the "Hinge-Lok" (Product No. 900-C) which fastens *around* the casing. Both types can be positioned with either Solid or Split-Ring Baker no-weld Stop Rings to avoid harmful welding on casing.



Personalities IN THE NEWS

New Division Personnel Announcement by Sunray

John H. Douma, vice-president and division general manager of Sunray Mid-Continent Oil Company, has recently announced key personnel for their newly designated "West Coast Division," with headquarters in Los Angeles, as follows:

O. A. Graybeal, division production manager; **H. L. Stine,** assistant secretary-treasurer and division office manager; **R. A. Smith,** assistant secretary and division attorney, and **E. W. Pease,** division geologist. All are veteran employees of the Sunray organization and have held similar positions in the former California district. Additional division staff appointments as well as key personnel for district offices to be established in California will be announced in the near future, Douma said.

Formerly designated the California district, the new division will be responsible for all company exploration, production, and plant operations in the states of California, Oregon, Washington, Nevada, Western Utah, and Northwestern Arizona.

Sunray's oil exploration program in the new State of Alaska will also be a division responsibility. The company's general offices are in Tulsa, Okla., and Sunray produces oil in 13 states.

Ottinger Relocated in Denver

W. A. McCullough, mountain division general manager McCullough Tool Company, has announced a shift of operating headquarters for **Newton H. Ottinger,** assistant division manager, Logging and Sales Promotion. Formerly at Durango, Colorado, Ottinger has relocated in the Commonwealth Building at Denver, Colorado.

A specialist in the interpretation and analysis of radiation logs, Ottinger is available for consultation on any logging problems that may arise.

L. T. Monson

Petrolite Elects Vice President

Louis T. Monson has been elected vice president of Petrolite Corporation. He presently is general manager of Tretolite Company of California, a division of Petrolite.

Dr. Charles M. Blair, president of Petrolite, announced Monson's appointment following a recent board of directors' meeting in Wilmington, Delaware.

Early last year Monson became general manager of the Tretolite Company of California division of Petrolite Corporation replacing **Glenn W. Camblin** who retired. Prior to that, Monson was chief chemist and director of research for the California division.

Ohio Oil Officials Exchange Positions

Two Ohio Oil Company production officials will exchange positions in the near future as a part of a rotation program designed to give domestic production officials foreign experience, according to **Paul L. Henderson,** vice president of production.

W. T. Kennedy, Los Angeles division superintendent of production, will transfer to Tripoli, Libya as operations manager of the Oasis Oil Company of Libya, a wholly owned subsidiary of Ohio Oil. **R. C. Farley,** operations manager in Libya, will assume Kennedy's position in the domestic group.

Strickland Retires After 38 Years With Standard Oil

Charles C. Strickland, local assistant regional manager for Standard Oil Company of California, Western Operations, Inc., retired on May 1 after more than 38 years' service with the oil concern.

Widely known in local petroleum marketing circles, Strickland joined Standard in 1921 at Oakland, California. He held a variety of positions in the marketing department at many locations in the western states during the period of his service with the Company. He was appointed to the position of assistant regional manager in Los Angeles in 1943.

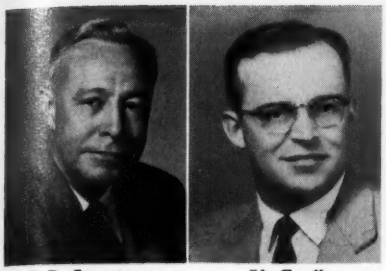
Strickland was honored at a retirement luncheon hosted by K. W. Kendrick, Standard's regional vice president, and attended by many friends and associates.

In addition to his many civic and community activities, he has been especially active in the petroleum industry's oil information committee program, having served as Southern California vice chairman for speakers and films for the past two years.

Petroleum Geologists Hold Annual Picnic June 5

The Annual Picnic of the Pacific Section, A.A.P.G., will be held June 5, in Britt Park, south of Piru. Dick Stewart, this year's chairman, forecasts an ample supply of choice beef plus the usual refreshments. Price $3.25.

In the morning the golf tournament will be held at Las Posas Country Club, Camarillo Heights. Reservations can be made with Bob Nesbit, 826 East Main Street, Ventura, California. Price $5.50.



H. D. Armstrong Al Graff

Armstrong Elected Treasurer For Standard; Judd Retires

The election of **H. D. Armstrong** as treasurer of the Standard Oil Company of California was recently announced by Board Chairman **R. G. Follis.** Armstrong succeeds **H. C. Judd** who retires after 28 years of service with the company.

Armstrong, who has been assistant to the chairman and is a director of various affiliated companies, joined Standard as assistant treasurer in 1943 after a career in law and banking.

He was appointed assistant to the chairman in 1947 and is a director of the California Texas Oil Corporation and related foreign companies of the Caltex group, which is owned 50 per cent by Standard. He is also a vice president of Iran California Oil Company, which manages Standard's 7 per cent interest in the Iranian oil consortium.

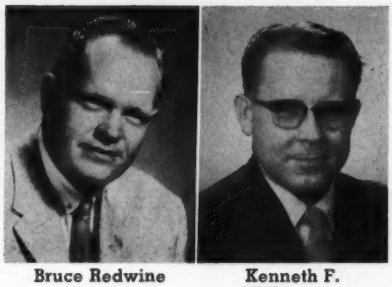
Judd, a native of Pendleton, Oregon, joined the Company in 1930 as Northwest Representative of the Treasurer's Office.

Service Company Announces Promotion

C. Z. Hughes, Rocky Mountain division manager for BJ Service, Inc., has announced the promotion of **Al Graff** to assistant manager of that division. Graff has had extended experience in the Rocky Mountains with the BJ organization.

From his Casper office, Graff will determine market potential, correlate sales activities, and see to the continued schooling of BJ personnel in the division.

In the Rocky Mountains BJ Service provides the production phase of the industry with acidizing, cementing, fracturing and wire line services. A subsidiary of Borg-Warner Corporation, BJ Service has general offices in Long Beach, California and Fort Worth, Texas.



Bruce Redwine Kenneth F. Williamson

Welex, Inc., Transfers Redwine

Welex, Inc., recently announced the transfer to Fort Worth and appointment of **Bruce Redwine** as executive assistant.

Redwine, a veteran of eight years service with Welex, formerly was general manager of Welex of Canada, Ltd., subsidiary of Welex, Inc., with headquarters in Calgary.

Williamson Joins Valve Company

Kenneth F. Williamson has been named assistant sales manager of Grove Valve and Regulator Company. The announcement was made by **George E. Doty,** vice president and general sales manager for the company.

Williamson will be headquartered in Grove's Oakland, California offices. Prior to joining Grove, Williamson was affiliated with W-K-M as sales coordinator. He served in various other manufacturing and marketing capacities during his 16 years with the company.

Los Angeles Basin Chapter A.P.I. Annual Golf Tournament and Barbecue June 5

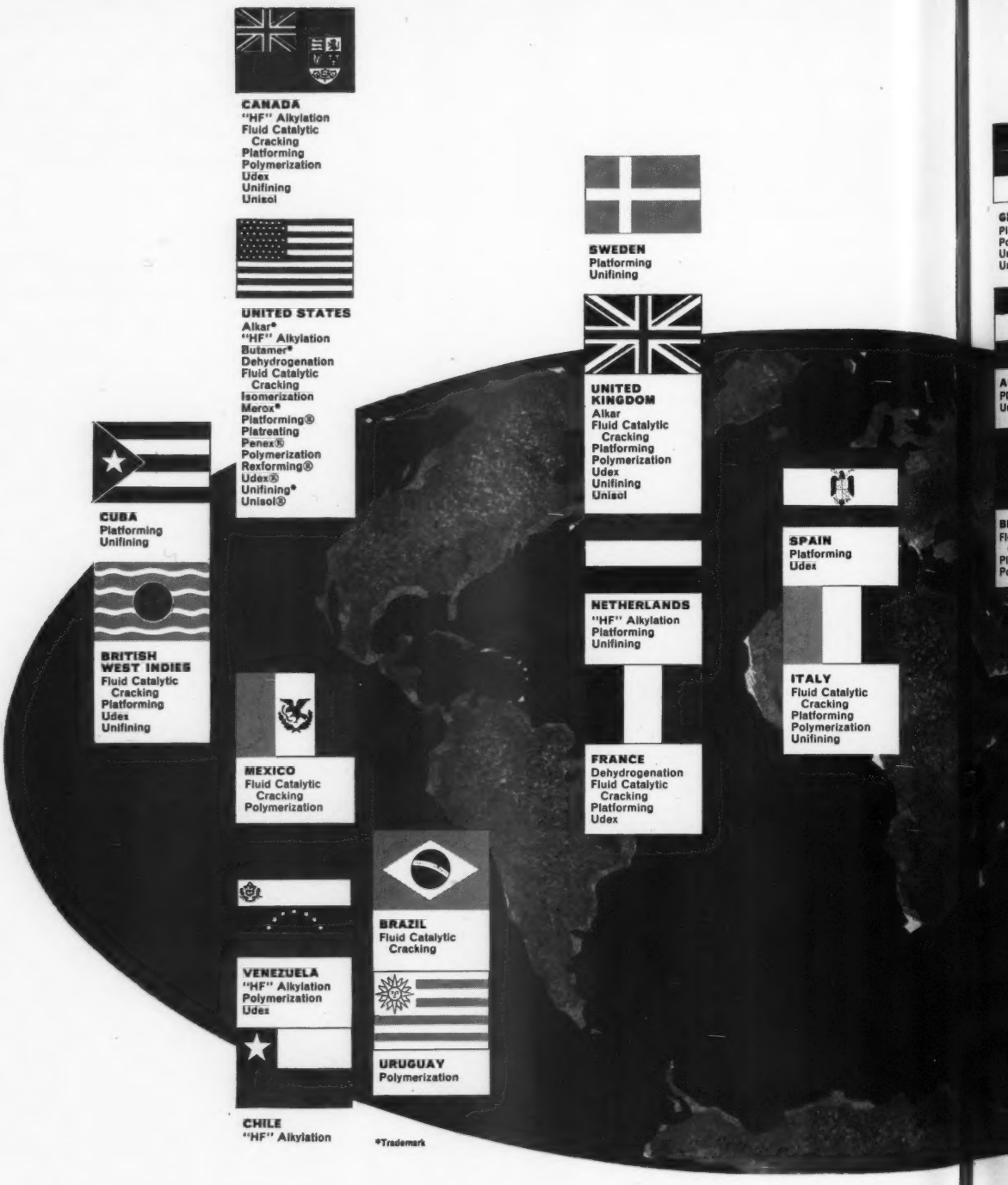
The Los Angeles Basin Chapter of the American Petroleum Institute will hold its Annual Barbecue and Golf Tournament at Meadowlark Country Club on Friday, June 5.

Assigned starting times are from 6:00 a.m. to 1:30 p.m., and individual times will be allocated on a "first come, first served" basis. Entry fees will be $3.50, which will entitle each player to participate in the low net and low gross competition. It is important that entries be mailed early.

Mail all entries to: Howard Kaylor, c/o Standard Oil Co. of Calif., Box 605, La Habra, California.

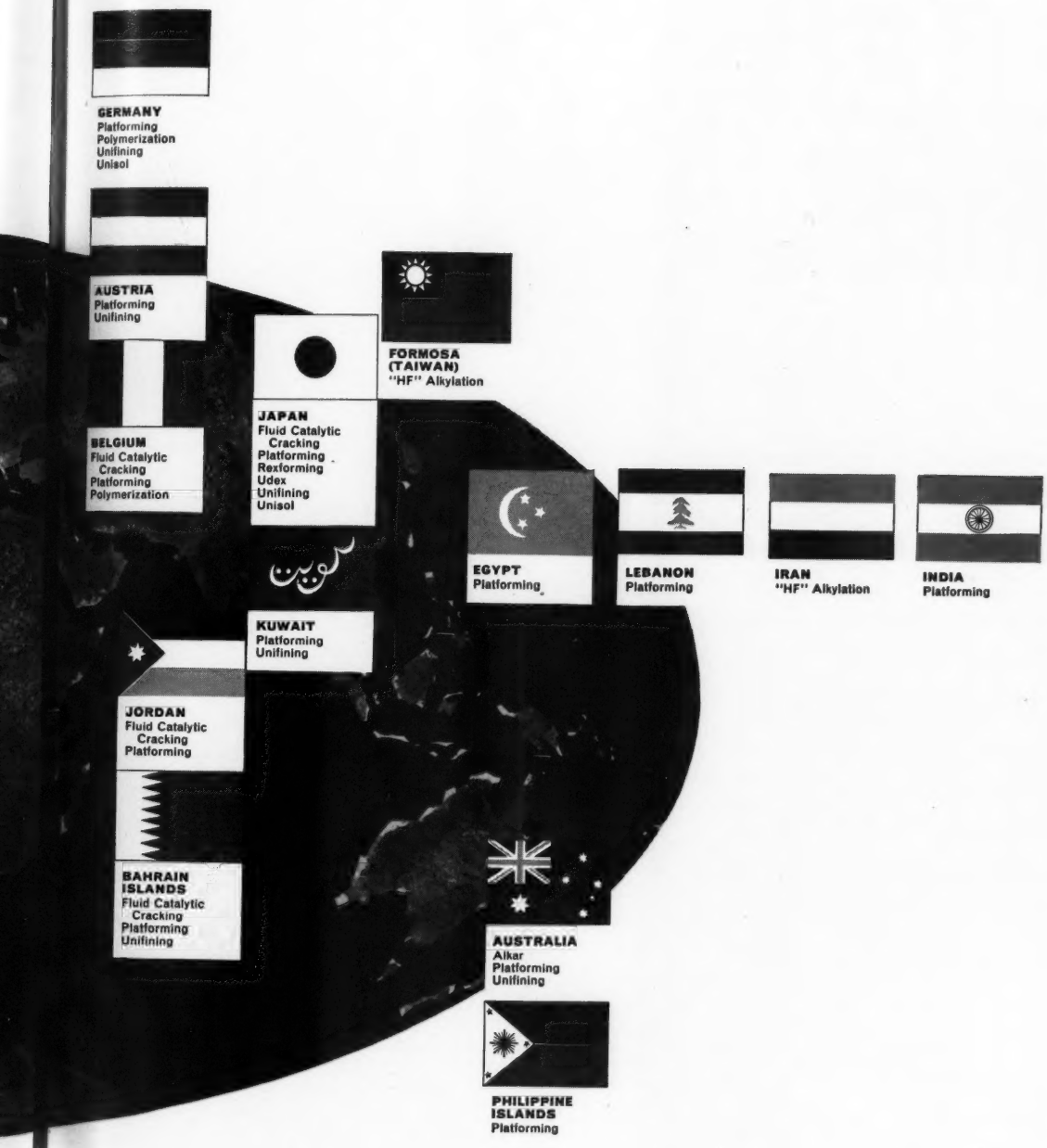
SMITH-EMERY CO.
Chemists—Engineers
Established 1910
Metals—Oils—Waters
Analyzed and Tested
Shipments Certified
781 E. Washington Blvd.
Los Angeles 21, Calif.
Member
American Council of Independent Laboratories

A GOLDEN SAFETY HAT FOR PEMEX " JEFE". OIL MAN ROLDAN—J. B. O'Connor, President (left) and H. N. Mallon, Chairman of the Board, Dresser Industries, Inc., present Engr. Pascual Gutierrez Roldan (center), newly appointed Director General of Petroleos Mexicanos (Pemex) with golden symbol of petroleum workers, and welcome him into the "Fraternity of Oil Men" at a Dallas (Texas) luncheon held in his honor, attended by nearly 600 leading oil executives, from all points of the nation.



CONTRIBUTIONS TO PETROLEUM PROGRESS . . .

Nearly one half-century ago, Universal Oil Products Company offered to the world a new and better way to refine crude oil. From that day to this the people of Universal have exerted unceasing effort to that end . . . to find new and better ways to process petroleum. The result of this endeavor is evident. Today, through the use of UOP processes and the help of UOP



technology, petroleum refiners in twenty-nine countries throughout the Free World are making more and better products from petroleum . . . meeting increasing demands for higher-quality fuels and petrochemicals. In the future as in the past, UOP will continue to make important contributions to technological progress in petroleum.

UNIVERSAL OIL PRODUCTS COMPANY
30 Algonquin Road, Des Plaines, Illinois, U.S.A.
More Than 40 Years Of Leadership In Petroleum Refining Technology

NEW OFFICERS FOR API ELECTED—The 1959-60 district officers for the API Division of Production, Pacific Coast District were elected at the annual business meeting held at the Biltmore Hotel in Los Angeles April 30. The new officers are as follows: left to right—Mrs. Elsie Edmiston, A.P.I. secretary; C. R. Ball, Ball & Black Supply Co., treasurer; H. H. Ewing, Union Oil Co. of California, district chairman; Paul Hamann, E. B. Hall & Co., vice chairman, Los Angeles Basin; Don J. Everitts, The Ohio Oil Co., vice chairman, San Joaquin Valley; Kenneth Nugent, McCullough Tool Co., vice chairman, Coast Area; O. A. Graybeal, Sunray Mid-Continent Oil Co., vice chairman, advisory committee; C. F. Gates, General Petroleum Corp. chairman, advisory committee; Leon E. Matthews, The Republic Supply Co., vice chairman, Coalinga-Kettleman.

Pickard Main Speaker at Oil Heat Convention

The 37th national convention of the Oil Heat Institute of America concluded in Seattle on May 2 after a week-long series of industry discussions and presentations by speakers from 14 states.

Highlight of the convention was the grand convention luncheon on May 1 which featured a talk on the oil heating industry and competition by Burton W. Pickard, vice president of marketing, Western Operations, Inc., Standard Oil Company of California.

The convention opened on April 28. Its first two days were devoted primarily to annual meetings, committee sessions and registration. The Technical Division Symposium was held on Thursday, April 30, and featured talks and presentations on new applications, new techniques and new equipment. The OHI of Washington annual Pacific Coast golf tournament also was held on Thursday.

The Distribution Division Dealer-Management Clinic convened on Friday, May 1, and the Commercial-Industrial Symposium also was held on that day.

Heating oil dealers and allied industry representatives from 30 states and Canada were in Seattle for the industry gathering. Robert G. Elmslie, managing director of the Oil Heat Institute of Washington and national co-chairman for the convention, termed the meeting "one of the finest ever conducted" by the industry association.

P.E.S.A. Elect Directors; Increase Districts to Five

The current Board of Directors of the Petroleum Equipment Suppliers Association now consists of 10 directors from each of five districts, 13 of which are newly elected.

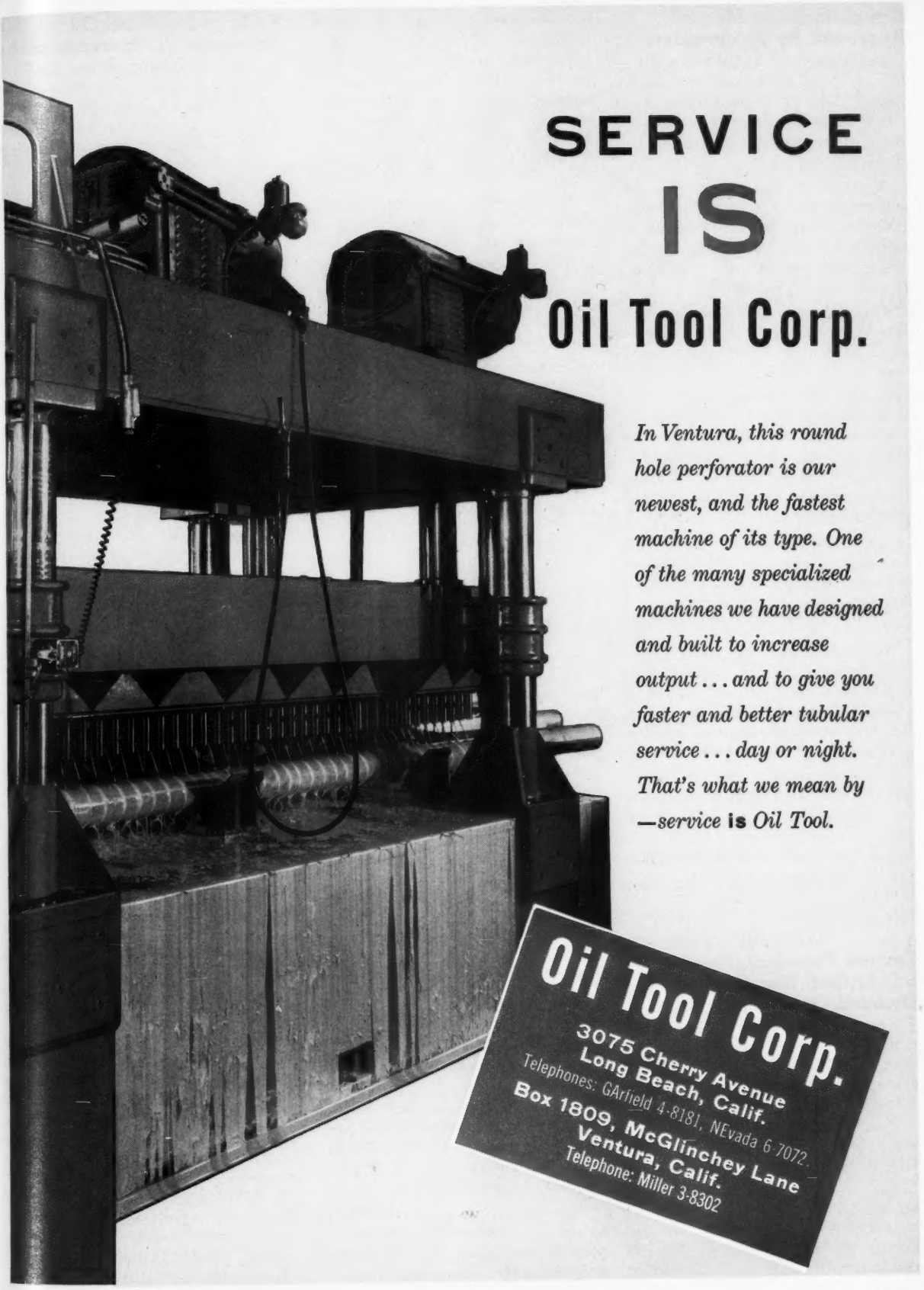
Election of directors and redistricting of the association from four to five districts was accomplished at the recently-held annual meeting of P.E.S.A. in Boca Raton, Florida.

All past presidents, 12 in all, are directors at large.

New directors are: W. H. Greer, Greer Supply Company, Owensboro, Ky.; F. E. Rath, Spang & Company, Butler, Pa.; G. W. Carrington, Exner-Dodge, Inc., Coffeyville, Kan.; John Eastman, Eastman Oil Well Survey Co., Denver, Colo.; T. N. Shults, Mid-Continent Supply Co., Fort Worth; R. D. Poindexter, Superior Iron Works & Supply Co., Inc., Shreveport, La.; L. L. Rector, Rector Well Equipment Co., Inc., Fort Worth; George B. Coale, Baroid Division, Houston; John Maher, Reed Roller Bit Company, Houston; Frederick W. Richmond, Houston Oil Field Material Co., Inc., Houston, A. S. Marshall, H. C. Smith Oil Tool Co., Compton, Calif.; E. J. Weis, Pacific Pumps, Inc., Huntington Park, Calif., and E. K. Wilson, Shaffer Tool Works, Brea, Calif.

New president of P.E.S.A. is Wallace D. Wilson of Houston, President of the Wilson Supply Company. Outgoing President is William T. Powell, Executive Vice President of the Continental-Emsco Company, Dallas.

International guests at the May, 1959 meeting of the Los Angeles Chapter of Nomads. Left to right (standing) Marc Velu of CFP(A) from Algeria; Robert Hache of S.N.MAREP from France; Y. F. Yang of Chinese Petroleum Corp. from China; Weldon B. Troop of Kuwait Oil Co. from Kuwait; T. M. Wu of Chinese Petroleum Corp. from China; Fred Peveto of I.P.C. from Iraq; Harry Smith of Cal. Tex from Sumatra; Ralph Connor of LTS from Algeria; H. B. White of Cal Tex from Sumatra; James E. Couch of Baker Transworld from Venezuela; Antonio Ossa of Empresa Nac. Pet. from Chile; (seated) Jose Owens of Empresa Nac. Pet. from Chile; Aderbal Almeida of Petrobras from Brazil; Antonio G. Rocha of Petrobras from Brazil; Hans Szepanek of Baker Oil Tools from Germany; C. Y. Meng of Chinese Petroleum Corp. from China; Jim Worsdall of Cameron Iron Works from Mexico.



SERVICE IS Oil Tool Corp.

In Ventura, this round hole perforator is our newest, and the fastest machine of its type. One of the many specialized machines we have designed and built to increase output . . . and to give you faster and better tubular service . . . day or night. That's what we mean by —service **is** *Oil Tool.*

Oil Tool Corp.
3075 Cherry Avenue
Long Beach, Calif.
Telephones: GArfield 4-8181, NEvada 6-7072
Box 1809, McGlinchey Lane
Ventura, Calif.
Telephone: Miller 3-8302

Signal-Bankline Merger Approved By Stockholders

Stockholders of Signal Oil and Gas Company and Bankline Oil Company voted May 11 overwhelmingly to merge the two firms on the basis of one share of Signal for five and one-half shares of Bankline.

Approval of the merger was announced jointly by Samuel B. Mosher, chairman of the board, and Russell H. Green, president, of Signal, the surviving corporation, and Bankline's president, L. L. Aubert.

The oil company heads said they expect the merger to become effective soon, following routine legal proceedings.

Mosher will remain chairman and chief executive officer, and Green will continue as president of Signal. Aubert has been elected to be a vice president and director, and S. A. Patterson, Bankline vice president, will be a vice president of the merged company.

Authorized capital for Signal will continue to consist of 400,000 shares of Preferred, 22,000,000 shares of Class A Common, and 3,000,000 shares of Class B Common (voting) stock.

At present Signal has 200,000 shares of Preferred, 7,791,111 shares of Class A Common, and 883,032 shares of Class B Common stock outstanding. Bankline has 833,835 shares of Common stock.

Bankline's trade name, "Norwalk," will be retained by Signal for operating the chain of service stations concentrated in Northern and Central California. Signal will continue to market gasoline through its subsidiary system of "Regal" stations and under the "Hancock" brand.

Texaco President Predicts 6% Annual Rise in Oil Demand Over Next 5 Years

Free World petroleum demand is expected to rise an average six per cent annually for the next five years, James W. Foley, president of Texaco Inc., said recently. He foresaw an increase in domestic demand of about 3.5 to 4 per cent yearly during the same period.

"Texaco is in proper balance from an operational standpoint, and in sound condition financially, to participate fully in supplying this expanding worldwide market," he told the Los Angeles Society of Security Analysts.

Texaco's faith in the West Coast was demonstrated last year with the completion of its regional headquarters building in Los Angeles, and by construction of a new, 45,000-barrel-a-day refinery, the Puget Sound Works at Anacortes, Washington.

Mr. Foley said the company's operations in production, refining and marketing of oil were at all-time high levels in the first three months of 1959. First-quarter earnings of $91,220,181 were the highest of any such period in Texaco's history, he pointed out.

Texaco's capital and exploratory expenditures in 1959 will approximately equal the record $515 million it spent last year, he reported.

Reviewing the international oil company's growth, he announced that its total assets increased by 200 per cent in 11 years, having passed the $1 billion mark in 1947 and the $3 billion mark in 1958.

New Quality Improvement Units for Texaco's Los Angeles Refinery

A multi-million dollar expansion program which will add two major processing units to Texaco Inc.'s Los Angeles Works at Wilmington was recently announced by James T. Wood, Jr., Senior Vice President at Los Angeles. Both units are designed to improve the quality of Texaco gasolines manufactured at the 60,000 barrel a day refinery.

The new units, on which construction is expected to begin in June, are a 12,000 barrel a day catalytic reformer and a 12,000 barrel a day hydrotreater. Each will supplement a similar unit already in operation at the Texaco refinery.

The catalytic reformer will be used to upgrade the octane rating of Texaco gasolines, while the hydrotreater will be used to further improve gasoline quality.

Ground for the two new units is currently being cleared in the north central section of Texaco's refinery, which stretches along U.S. Highway 101 east of Long Beach.

Approximately one year will be required to complete the construction program and place the new facilities on stream, Mr. Wood estimated.

Follis of Standard Oil Forecasts 5% Increase in U. S. Oil Demand for 1959

Board Chairman R. G. Follis of the Standard Oil Company of California said recently the business outlook is "becoming progressively more favorable" and forecast a growth in petroleum demand of five per cent for the United States and nine per cent for the free foreign areas in 1959.

Speaking to the Company's annual meeting of stockholders, Follis commented that many of the problems which existed in 1958 "have worked themselves out." He also predicted that the current oil imports control program would tend to reduce surplus inventories of domestic crude oil and products.

He pointed out, however, that "the demoralized price situation that prevailed in 1958 has not been cleared up to this time."

Standard, Follis said, expects increased earnings from the Western Hemisphere to be offset by lower returns from Eastern Hemisphere affiliates, due to lower prices, the depressed tanker market, and the need for companies to reinvest earnings in order to keep up with demand growth.

Standard's first quarter results, which were the same as in the corresponding quarter for 1958, sustain this opinion, he pointed out.

The Chairman reported Standard is proceeding with a capital expenditure program in excess of $400,000,000 compared with $343,000,000 in 1958. Principal expenditures are for exploration and for development of already established oil fields, together with special outlays for refinery and tanker construction.

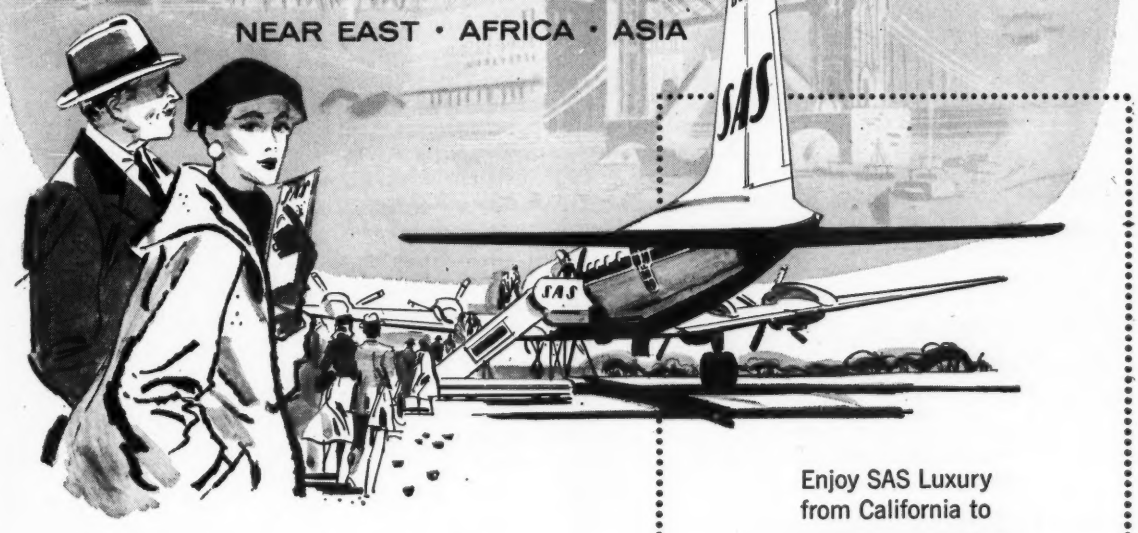
NEW LITERATURE

Map Instruction Manual

Publication of a third instructive booklet, "Oil Land Maps" by the Oil Map Association of Los Angeles was announced recently. Copies are available free to interested individuals and institutions and may be obtained through John E. Asher, General Petroleum Corporation, Box 2122, Los Angeles 54. Previous booklets issued by the mapping group were "Effective Photographic Slides" and "Introduction to Oil Map Drafting."

America makes SAS One of the "Big 3" to Europe

NEAR EAST • AFRICA • ASIA



Though there are a dozen airlines to Europe, passengers by actual count make SAS one of the "Big 3" to the Continent. And only SAS flies the direct polar route from California to Europe . . . to all the Near East and Africa.

Magnificent DC-7C Global Express

Fly the fastest, quietest of all airliners, over the polar short-cut from Los Angeles to Europe. Luxurious first class service offers regal meals, champagne, spacious berths to make your trip a handful of splendid hours. Tourist class has exclusive SAS Comfort-Line seating which gives you more room to read, dine, sleep. Global Express flights direct from New York to all Europe, too.

For Travel or Cargo Reservations — See your Agent or SAS
607 W. 6th St., Los Angeles • 8929 Wilshire Blvd., Beverly Hills
Beverly Wilshire Hotel, Beverly Hills
Phone: OLeander 5-8600 — OLympia 2-8600

Enjoy SAS Luxury from California to

ABADAN • CAIRO
ANKARA • DAMASCUS
BAGHDAD • ISTANBUL
BEIRUT • TEHERAN
TEL AVIV

FIRST OVER THE POLE

SAS
SCANDINAVIAN AIRLINES SYSTEM

West Coast Offices: Los Angeles • San Diego • San Francisco • Seattle • Vancouver

Field Development

Pacific Coast and "4" Corners

LOS ANGELES BASIN

Beverly Hills Test Logs Sand

Universal Consolidated Oil Company is reported to have logged some 450 feet of oil sand in its well, Community 9-A, now drilling below 11,090 feet. 7" casing is cemented at an undisclosed point. Surface location of the well is near the intersection of Santa Monica Blvd. and Fox Hills Drive, in Section 26-1s-15w.

Hillcrest Well Shut In

Signal Oil and Gas Company completed and shut in Signal-Richfield-Hillcrest No. 2 located on the Hillcrest Golf Club near the intersection of Pico Blvd. and Peg Place. Total depth of the well is 10,438 feet with 7" casing cemented at 9300 feet. Completion data on the test has not been released. The company has two wells drilling in the immediate area. Signal-Richfield-Community No. 3 is drilling below 1900 feet and Signal-Richfield-Rancho No. 4 is drilling below 7790 feet.

Castaic Test Abandoned

The Ohio Oil Company abandoned Austin Estate No. 1 located in the southwest quarter of Section 27-5n-17w, approximately one mile northwest of the Castaic Hill Field. Drilled to a total depth of 5507 feet, a formation test recovered mud and salt water.

Approximately one mile north of the abandoned Austin Estate No. 1, The Ohio Oil Company is preparing to spud Romero No. 1 located in the northeast quarter of Section 21-5n-17w.

Saugus Completion For Union

Union Oil Company completed N. L. & F. No. B-4 flowing 72 b/d of 28.0 gravity oil cutting 28 per cent with pressure of 275/650 psi along with 200 mcf of gas. The well, a northeasterly extension test located in the northwest quarter of Section 15-4n-16w, was drilled to a total depth of 11,145 feet and plugged back to 10,543 feet. A string of 5½" casing, perforated from 9258-10,455 feet, is landed on the plug at 10,453 feet.

Torrance Test Abandoned

After failing to develop deep zone production, The Termo Company abandoned Oakes-Combs No. 41, located in Section 19-4s-13w, at a total depth of 5250 feet. The project has been turned over to Roy Wolfgram who will try to complete in the shallow zone.

Wilmington Well Abandoned

Atlantic Oil Company's Irwin No. 1, located at the intersection of Sandison and Island Streets in Section 29-4s-13w, was abandoned after deepening from 3633 feet to 5450 feet. No tests were made on the lower part of the hole.

Oak Canyon Redrill

Hathaway Company is moving in rotary to redrill Ram No. 2 located on Section 31-5n-17w. The well was originally drilled to 8090 feet and plugged back and completed from 2745 feet.

West Newport Test

Red Star Oil Company has started drilling Red Star-B.P.S. Associates No. 1 at West Newport. Located on Section 12-6s-11w, the well is near the intersection of Atlanta and Canary Streets. Company tools are being used.

New Torrance Test

C. C. Dawson and Lloyd Rainey are preparing to drill McHenry No. 3, located 189 feet south and 775 feet east from the intersection of Narbonne and 231st Street.

Zephyr to Drill at Wilmington

Zephyr Oil Company is starting Leon No. 12 on Section 29-4s-13w, located 411 feet south and 133 feet west from the intersection of Pacific Coast Highway and Marine Avenue.

Castaic Junction Test

Humble Oil & Refining Company is preparing to drill N. L. & F. No. 64 located in the southeast quarter of Section 13-4n-17w.

SAN JOAQUIN VALLEY

Tejon Recompletion for Richfield

Richfield Oil Corp. reperforated the interval 9715-9905 feet and recompleted KCL-I No. 78-13 flowing 550 b/d of 34.9 gravity oil cutting 7 per cent through a 1" bean. Located in the southeast quarter of Section 13-11n-20w, the well was first completed in February this year at a total depth of 10,769 feet and a plugged depth of 10,110 feet, flowing 510 b/d of 35 gravity clean oil.

Hanford Test for McCulloch

McCulloch Oil Exploration Co. of Calif., Inc. has staked location for McCulloch-Swanson No. 1 in the southwest quarter of Section 6-18s-22e. The well is scheduled to be drilled to approximately 7000 feet and will be a Miocene and Eocene test.

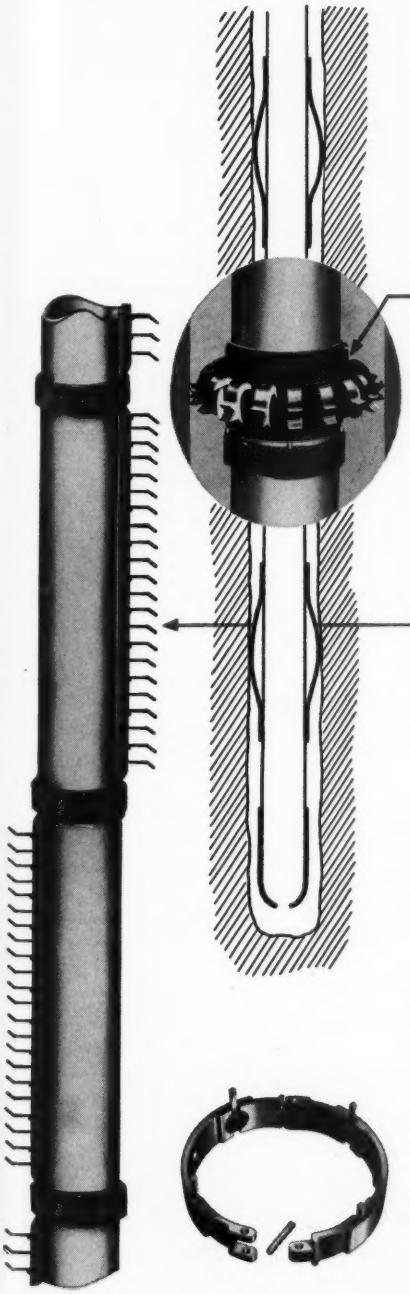
Ten Section Joint Test

Universal Consolidated Oil Company is grading rig site for Statex-Shell-KCL No. 31-28 located in the northwest quarter of Section 28-30s-26e. The well is a joint venture with State Exploration Co. and Shell Oil Co. also has an interest in the test. Located on a 1320-acre block leased from the Kern County Land Co., the well will be drilled to approximately 10,500 feet with the Lower Stevens Zone the objective.

Tejon Test Abandoned

In the Highway area of the North Tejon field, Richfield Oil Corp. abandoned KCL-I No. 87-13, located in the southeast quarter of Section 13-11n-

IT'S NO SECRET! BETTER BONDING BEGINS WITH BETTER WALL CLEANERS by HALLIBURTON



Roto Wall Cleaners Installed with Vise-Lok Limit Clamp

The secret of successfully stronger primary cementing jobs is a better bond ... to minimize precautionary and remedial squeeze jobs.

Halliburton Roto Wall Cleaners and Recipo Wall Cleaners... are field-proven and are first-choice abrading devices by thousands of well operators for efficient performance—under the most punishing downhole conditions—for the removal of undesirable filter and mud cake from the bore hole... allowing a stronger bonding of cement to formation and casing in primary cementing.

RECIPO WALL CLEANER... reciprocating type cleaner

New design offers these advantages:

- Removal of tough filter cake—without damage to hole wall.
- Circulating pressures and bridging action of cuttings reduced.
- Flexible rubber cleaning fingers minimize bore hole or filter cake damage while running in.
- Tough wide cleaning fingers cover more bore hole area and clean more thoroughly.
- Wide cleaning fingers help to break channeling action of cement.
- Cleaning effectiveness is increased—yet "finger" damage is decreased due to their flexibility which prevents permanent bending.
- Hinged for fast and easy latch-on installation.

ROTO WALL CLEANERS... rotary type cleaner

New standard designed recessed base and "Claw-Type" Cleaning Spikes provide:

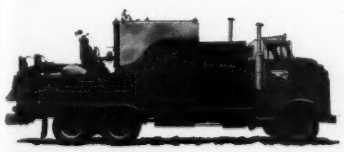
- Installation on casing by Vise-Lok Limit Clamp or tack welding.
- No bridging off of annulus.
- Permits free-flow of fluids while running casing, cementing and circulating.
- Minimum disturbance of mud cake while running casing to bottom reduces lost circulation problems.
- Reduces hazard of "sticking casing" off casing point.
- Turbulent action of cleaning spikes gives better cement uniformity.
- Construction allows minimum damage to spikes or filter cake while running in—provides maximum force for cleaning when rotating casing.
- Economy—one size base fits all O.D. sizes of casing.
- Slim Hole Roto Wall Cleaners are available for better cementing where annulus between casing and bore hole is small.

VISE-LOK LIMIT CLAMPS... equal to welding even under severe torque loads!

A new method for positioning auxiliary equipment on casing without welding ... each clamp has these outstanding features:

- 20,000 pound load-carrying capacity—greater than any non-weld limit clamp or stop collar tested.
- Design and superior lock-on power of the special disc-type slips grip the casing and prevents movement of auxiliary casing equipment.
- Provides selective location and limits travel in either direction.
- Easy installation with hinged design.

For a better bond and cement uniformity on your primary cementing job ... check with your Halliburton Representative about the unique features of Recipo Wall Cleaners... Roto Wall Cleaners and the *new* method of installation with the Vise-Lok Limit Clamp.



HALLIBURTON

CEMENTING SERVICES

HALLIBURTON OIL WELL CEMENTING COMPANY • DUNCAN, OKLAHOMA

"284 SERVICE CENTERS – JUST MINUTES AWAY FROM YOUR WELL!"

20w, at a total depth of 12,269 feet. With 7" casing cemented at 11,645 feet, tests of several zones proved negative.

Garrison City Gas Completion

Richfield Oil Corp. completed ROCI-Mitchel-Thiessen No. 1 in the northeast quarter of Section 9-28s-24e as a dual completion from both Upper and Lower Zones. Flow from the Lower Zone, perforated from 5953-55 feet, was 4640 mcf of gas per day through a 22/64" bean and from the Upper Zone, perforated from 4466-88 feet, flow was 7800 mcf of gas per day through a 25/64" bean. Lower Zone pressure was 1450 psi and Upper Zone pressure 1700 psi. Total depth of the well is 6015 feet and 5½" casing perforated opposite the zones is cemented at 6015 feet.

Vallecitos Extension Test Drilling

Coast Exploration Co. is drilling below 1900 feet on Coast-USL No. 74X-29, an extension test located in the northeast quarter of Section 29-16s-11e.

Rio Bravo Flank Test

Union Oil Company is preparing to spud KCL No. 25X-26 located near the west quarter corner of Section 26-28s-25e, an edge well approximately one-half mile northeast of the present field production.

Maricopa Well to Deepen

Gene Reid Drilling, Inc. is preparing to deepen Havenstrite-USL No. 1 from its present depth of 3200 feet to approximately 6000 feet. Location of the well is in the northeast quarter of Section 11-11n-23w.

Edison Wells to Redrill

Monterey Oil Company is preparing to redrill two wells in the proven field area. The well Fee 13 No. S-4 in Section 13-30s-29e, completed in 1952 from a depth of 1861 feet, will be redrilled, and McCowan 13A No. 9 also in Section 13 with a present depth of 1862 feet will be redrilled.

Garrison City Test Abandoned

Golden Bear Oil Company found the Gas Sand absent in C.W.O.D. No. 66X-4 and abandoned the test. Located in the center of the southeast quarter of Section 4-28s-24e, the well was drilled to a total depth of 6100 feet. Golden Bear's Ohio-Mitchel No. 66X-9 in Section 9 may be abandoned due to water encroachment. Tubing is being pulled to determine if the water can be cemented off.

San Emidio Creek Wildcat

Shell Oil Company is ready to spud KCL No. 56-29, a wildcat test, approximately 1½ miles north of the White Wolf activity. Location for the test is in the southeast quarter of Section 29-11n-21w.

Mountain View Test

Union Oil Company has staked location for Union-Signal-Jewett No. 64-16, a wildcat test located in the northeast quarter of Section 16-31s-29e, on the westerly flank of the field.

Rosedale Completion for Humble

Humble Oil & Refining Company completed Hugh S. Allen No. 1, an extension test, flowing 170 b/d of 27.6 gravity oil with a cut of 0.4 per cent through a 3/16" bean with pressures of 900/1200 psi. Located in the northeast quarter of Section 23-29s-26e, the well drilled to a total depth of 5118 feet and cemented 4½" casing at 5056 feet. Production is from the jet perforated interval 4854-4840 feet.

Rosedale Abandonment

Humble Oil & Refining Co. abandoned Louise Allen Renfro No. 1, a southeasterly outpost test located in the northeast quarter of Section 23-29s-26e, at a total depth of 5200 feet.

Tidewater Completes Strand Well

Tidewater Oil Company completed KCL No. 27-8, located in the southwest quarter of Section 8-30s-26e, flowing 525 b/d of 30 gravity oil cutting 0.6 per cent through a 48/64" bean with pressures of 125/300 psi and gas flow of 260 mcf. The well was drilled to a total depth of 8499 feet and cemented 5½" casing at 8355 feet, and later perforated from 8182-8158 feet.

Fresno Test Abandoned

Pacific Oil and Gas Development Corp. abandoned Crocker-Anglo-Monteagle No. 86-7, located near the east quarter corner of Section 1-16s-19e, at a total depth of 7450 feet. The well, the first of a series of tests to be drilled on a 5000-acre lease block, was bottomed in Cretaceous sand.

Pacific Oil & Gas' second test of the area, Honolulu Oil-Turner No. 71-8, located in the northeast quarter of Section 8-16s-19e, is drilling below 6000 feet.

Richfield San Emidio Completion

Richfield Oil Corp. completed KCL-H No. 45-9 flowing 470 b/d of 30.2 gravity oil cutting two per cent through a 17/64" bean. Located in the southwest quarter of Section 9-11n-21w the well, a Stevens Sand extension, was drilled to a total depth of 12,645 feet and plugged bottom back to 12,082 feet. A string of 5½" casing, with perforations from 12,047-12,082 feet, was landed on the plug and cemented through perforations at 12,036 feet.

Canal Test for Signal

Signal Oil and Gas Company has staked location for KCL No. 32-10 in the northwest quarter of Section 10-30s-25e. The test will be drilled to approximately 10,200 feet for a test of the Stevens Sand. Nearest production is about one mile southeast on the Shell Oil Company's Canal-A lease in Section 14-30s-25e.

Kelly Station Test Abandoned

Shell Oil Co. has abandoned KCL No. 88-23, located in the southeast quarter of Section 23-11n-21w, with a drill pipe fish in the hole at a total depth of 14,377 feet. The test was approximately one mile northwest of the Pleito Oil Field.

Fresno County Deep Test

McCulloch Oil Exploration Company of Calif., Inc. has staked location for McCulloch-Standard No. 1, located in the northeast quarter of Section 11-22s-16e. The test, six miles southeast of the Jacalitos Field, will be drilled to approximately 14,000 feet.

Southeast Comanche Point Test

Texas Meat Brokerage, Inc. is drilling below 1675 feet on Tejon No. 1-4 located on Section 4-11n-18w, approximately 1½ miles north of the Tejon Hills field.

McKittrick Wildcat Test

J. Paul Sievers, Operator and Sapphire American Petroleum Company are

KONTOL

CORROSION INHIBITOR

is preventing corrosion in every California Oil Field

TRETOLITE COMPANY OF CALIFORNIA SERVICE INCLUDES . . .

FREE

1. Technical Field Service
2. Corrosion Test Plate Survey
3. Iron Analysis

XC 59-1

PETROLITE
CORPORATION

TRETOLITE COMPANY
KONTOL
CORROSION INHIBITOR
SAINT LOUIS · LOS ANGELES

Chemicals and Services for the Petroleum Industry

MISSOURI: Tretolite Company, 369 Marshall Avenue, St. Louis 19
CANADA: Petrolite Corporation of Canada, Limited, 309 Alexandra Bldg., Edmonton, Alberta
COLOMBIA: South American Petrolite Corporation, Calle 19, No. 7-30, Office 807, Bogota
ENGLAND: Petrolite Limited, 46 Mount Street, London W. I.
VENEZUELA: South American Petrolite Corporation, Hotel Avila, Caracas

REPRESENTATIVES

BRAZIL: WERCO, Ltda., Rua General Gurjao 326, Rio De Janeiro
GERMANY: H. Costenoble, Guiollettstrasse 47, Frankfort, a.M.
ITALY: NYMCO S.p.A. 9, Lungotevere A. da Brescia, Rome
JAPAN: Maruwa Bussan KK, No. 3, 2-Chome, Kyobashi, Chuo-Ku, Tokyo
KUWAIT: F. N. Dahdah, Box 1713, Al Kuwait
MEXICO: R. E. Power, Sierra de Mijes, No. 125, Mexico, D. F.
NETHERLANDS: F. E. C. Jenkins, Hoefbladlaan 134, The Hague
PERU: International Gas Lift Company, Apartado 71, Talara
TRINIDAD: Neal and Massy, Ltd., Port of Spain, P. O. Box 544, San Fernando

TRETOLITE COMPANY OF CALIFORNIA
DIVISION
5515 TELEGRAPH ROAD, LOS ANGELES 22

moving in rotary to drill McKittrick-Townsite No. 1 located near the west quarter corner of Section 21-30s-22e. The test is expected to be drilled to approximately 3000 feet.

NORTHERN CALIFORNIA

Beehive Bend Completions

General Petroleum Corp. completed Section 49 Unit No. 2A flowing 19,680 mcf of gas per day through a 74/64" bean with pressures of 875/1190 psi. With the bean reduced to 44/64" flow was 14,400 mcf of gas per day with pressures of 1110/1150 psi. Located in the northeast quarter of Section 33-20n-2w, the well was drilled to a total depth of 4000 feet and cemented 5½" casing at 3997 feet and gun perforated with 4, ½" holes per foot the interval 3867-3122 feet.

General Petroleum Corp. recompleted McGowan No. 1 from the Upper Zone interval from 3928-3640 feet flowing 4250 mcf of gas per day through a ½" bean with pressures of 800/880 psi. Located in the southwest quarter of Section 25-19n-2w, the well was first completed in 1954 at a total depth of 5257 feet from the Lower Zone interval 4960-4945 feet.

Butte County Gas Test

Humble Oil & Refining Company is drilling below 1500 feet on Leon Brink No. 1 located in the northwest quarter of Section 24-18n-1w. Location of the test falls approximately 4000 feet southeasterly of the Schohr Ranch gas field.

Colusa County Test Abandoned

Four miles northwest of the Arbuckle Gas Field, Wm. H. Hudson abandoned Zumwalt No. 2 at a total depth of 5003 feet. The test was located in the northeast quarter of Section 35-14n-3w.

Contra Costa County Test

Trico Oil and Gas Company's Faria Unit No. 1 is drilling below 2950 feet in sand and shale. Located in the northwest quarter of Section 21-2n-1w, approximately two miles southeast of the Port Chicago gas area, the well will be drilled to about 5500 feet.

Intex Oil Company is grading location for South Penn-Delta No. 1, a gas test, to be drilled in Section 7-2n-3e.

Drilling crew on Long Beach Oil Development Company's Well No. W-44, Terminal Island. Left to right: J. M. Cook, head well puller; R. N. Bettleyon, derrickman; R. E. Kelly, floorman; and J. L. Springer, floorman.

Walnut Grove Gas Completion

Standard Oil Company completed McCormick-Williamson No. 4, an outpost well, flowing 2850 mcf of gas per day through a 5/16" bean with pressures of 1150/1407 psi. Located in the southeast quarter of Section 36-4n-4e, the well was drilled to a total depth of 4500 feet and cemented 5½" casing at 3820 feet. Casing was subsequently gun perforated from 3707-3697 feet.

Solano County Test for Intex

Intex Oil Company has staked location for Amerada-Santra No. 1, a gas test, located in Section 10-6n-2e.

San Mateo County Tests

Neaves Petroleum Developments have staked locations for two tests in the La Honda area. Neaves-Union-Burns No. 1, a wildcat test, will be drilled in the southeast quarter of Section 21-7s-4w approximately 1½ miles southeast of production. Neaves-La Honda No. 10, located in the northwest quarter of Section 17-7s-4w, will be a westerly offset to production.

Pescadero Test for Humble

Humble Oil and Refining Company has staked location and is awaiting approval of the planning commission for Santa Cruz Lumber Company No. 1, a wildcat test, located in Section 1-8s-4w. Location for the test is midway between the La Honda and Oil Creek fields.

Petaluma Well to Deepen

C. H. Chamberlin is preparing to deepen Mangel No. 2 from its present depth of 1214 feet. Located in the northeast quarter of Section 30-4n-5w in Sonoma County, the well was abandoned in 1958.

COASTAL AREA

Oxnard Test for Standard

Standard Oil Company is preparing to spud Daily No. 1 located in the southwest quarter of Section 12-1n-22w. The well is an extension test of the Oxnard Pool.

Shiells Canyon Wildcat Test

Humble Oil and Refining Co. is grading drill site for Cora Saviers et vir No. 1 located in the southeast quarter of Section 9-3n-19w. The location falls approximately one mile south of Shiells Canyon field production.

Texaco Offshore Development

Texaco Inc. has announced location for Texaco-Monterey-PRC 2206.1 Core Hole A, an offshore test located in the southwest quarter of projected Section 11-4n-33w. Texaco-Monterey-PRC 2206.1 Core Hole No. 4, also in projected Section 11, is drilling below 4000 feet.

Arroyo Grande Strat Tests

Husky Oil Company has staked locations for three Stratographic tests

near Arroyo Grande. Guidetti No. 15 and No. 16 will be drilled in Section 36-31s-12e and Guidetti No. 17 in Section 25-31s-12e.

Moorpark Test Abandoned

Roy Gill and Associates' Gill No. 1, located three miles northwest of Moorpark in the northeast quarter of Section 20-3n-19w, after running an electric log was plugged and abandoned at a total depth of 7534 feet.

Humble's West Montalvo Activity

Humble Oil and Refining Company completed Louis T. Kraemer et ux No. 1 located in the southeast quarter of Section 31-2n-22w flowing 210 b/d of 31 gravity oil cutting 0.2 per cent through a 12/64" bean and 120 mcf of gas per day. After drilling to a total depth of 12,253 feet, 7" casing was cemented at 12,226 feet. Cement was cleaned out to 12,130 feet and casing was then gun perforated from 12,123-12,016 feet. Humble is now drilling J. D. McGrath No. 3 located in the northwest quarter of Section 31-2n-22w, approximately 2200 feet northwest of its producing wells No. 1 and No. 2.

Fillmore Joint Test

Standard Oil Company and General Petroleum Corp. are grading roads for Arundell No. 1 near the center of Section 19-4n-19w. The test is slated to go to approximately 14,000 feet.

La Goleta Gas Storage Well

Pacific Lighting and Gas Supply Co. is drilling Goleta No. 1, a gas storage well located in the northwest quarter of Section 21-4n-28w.

Santa Barbara County Wildcat

In the Gaviota area, Martin Bertagnole of Casper, Wyoming, has staked location for Teapot-Fox No. 1 in the southeast quarter of Section 31-5n-32w. Location for the test is 400 feet west of the L. E. Broadhurst well Mercedes-Fox No. 1, now standing suspended at a depth of 4048 feet.

Franco Western Wildcat Test

Franco Western Oil Company has announced location for Texaco-Security First National Bank No. 1, to be drilled in the northeast quarter of Section 15-2n-21w. The well will be drilled to approximately 8000 feet and is about four miles northeast of the Oxnard Field, and four miles southeast of the Saticoy Field.

OTHER STATES

Utah

British-American Oil Producing Company's Government-Norwood No. 1 in Section 15-40s-22e, on a test of the Bluff Zone from 5650-5700 feet, recovered gas-cut mud, 30 feet of oil and some salt water. Gas flowed at a 300,000 mcf per day rate and decreased to 100,000 mcf per day rate. Testing will continue from 5766 to 5827 feet.

In San Juan County, Continental Oil Company completed Navajo No. 7 located in the northwest quarter of Section 27-40s-25e flowing 990 b/d clean oil through a 1" bean. Drilled to a total depth of 5900 feet, casing was landed at 5900 feet and perforated at intervals within 5882-5810 feet. Continental Oil Company has abandoned Federal-Hatch No. 1, located in the northwest quarter of Section 15-39s-23e, at a total depth of 6440 feet.

Hyland Oil Company continues testing on Bend Unit No. 1 located in the northeast quarter of Section 8-7s-22e. On a test of the interval 2872-2884 feet the well flowed 4100 mcf of gas per day through a ¼" bean. Total depth of the well is 2950 feet with 5½" casing cemented at 2944 feet.

New Mexico

Two wildcat Dakota tests are scheduled for San Juan County in the Horseshoe Canyon-Verde area. One and one-half miles south of the Verde Field, Albert C. Bruce, Jr. is grading location for Federal-Pipkin No. 1 in the northeast quarter of Section 5-30n-14w. Dakota is expected to be logged at 5700 feet. Atlantic Refining Company will drill Navajo No. 45 in the southwest quarter of Section 29-31n-16w. It will be the first deep test of the field and will test the Dakota.

Alaska

Standard Oil Company and Richfield Oil Corp.'s Swanson River Unit No. 4A in Section 16-8n-9w, with a total depth of 12,582 feet, is redrilling below 11,095 feet. Work has not started on Swanson River Unit No. 5 and No. 6.

In the Iniskin Bay area, Alaska Consolidated Oil Company is drilling below 6700 feet on Antonio Zappa No. 1. Location of the test is in Section 18-5s-23w.

Although the location has not been surveyed, Richfield Oil Corp. will drill a test near the town of Yakataga on Capa Yakataga.

Johnston Stainless Welding Rods

PROVEN QUALITY SINCE 1931

•

JOHNSTON STAINLESS WELDING RODS INC.

1845 E. 57th St. - Los Angeles 58, Calif.

LUdlow 8-2508

LAUGH THIS OFF!!

Bars are something which, if you go into many of, you are apt to come out singing a few of, and maybe land behind some of.

Jack — "The bank has returned that check!"

Dixie—"Isn't that splendid? What shall we buy with it this time?"

Suzy—"Did that course in English grammar help your boy friend any?"

Patsy—"Not at all. He still ends every sentence with a proposition."

Just about the time you teach youngsters that you can't put more in a container that it will hold, along comes a fat woman in slacks.

A bachelor, left in charge of his baby niece, was faced with a crisis. He frantically called a young acquaintance who solved the problem in this man-to-man fashion: "First, place the diaper in position of a baseball diamond with you at bat. Fold second base over home plate. Place baby on pitcher's mound. Then pin first and third to home plate."

A guest handed the hotel manager a bouquet of flowers. "It's for the phone girls," he said.

Pleased, the manager said, "Thank you, Sir, thank you. I know they will appreciate the compliment."

"Compliment?" roared the guest, "I thought they had all died."

A government aide had quickly suppressed a directive given out by a state official.

Posted on the bulletin board in his office were these inviting words:

"Executives who have no secretaries of their own may take advantage of the girls in the stenographic pool."

"I don't like your heart action," said the doctor. "Apparently you've had some previous trouble with angina pectoris."

Heaving a sigh of relief, the young hopeful said: "Yes, doctor, I have, but you haven't got her name right."

"Won't you give a shilling to the Lord?" said a Salvation Army girl to an old Scotsman.

"How auld are ye, lassie?" he asked.

"Nineteen, sir."

"Ah, weel, I'm past 75. I'll be seeing Him afore you, so I'll hand it to Him myself."

The decrepit old car drove up to the Bay Bridge toll gate.

"Fifty cents," cried the gateman.

"Sold," replied the driver.

"The greatest man who ever lived was Jerkins—broadminded, tolerant, generous, big-hearted and brilliant, yet he died with all his talents unsuspected."

"And how did you manage to find out so much about him?"

"I married his widow."

A mousy little man was frightened silly of his boss. One day he told a fellow worker he was sick. His friend suggested he go home.

"Oh, I couldn't do that."

"Why not?"

"The boss would fire me."

"Don't be silly. He'll never know. He's not even here today."

Finally the man was convinced and went home. When he got there he looked in the window and saw his boss kissing his wife. So he ran all the way back to the office.

'A fine friend you are!" he said to his co-worker. "I nearly got caught."

Woman looking helplessly at a flat tire. A passerby stopped to help her. After the tire was changed the woman said: "Please let the jack down easy. My husband is asleep in the back seat."

Pacific's . . . . ONE STOP
Service speeds well completion
Pipe Slotting and Threading per your specifications — one delivery — and one pick up!
Let us explain in detail how Pacific can save you money . . . and speed up your well completion.
Pacific Perforating Company
Main Office and Plant: Torrance, California
FAirfax 8-6787 • NEvada 6-5789
For Prompt, Efficient Service In
Bakersfield FAirview 2-4390
Ventura Miller 3-5959
Taft
Coalinga
Taft 5-4426
Coalinga 6-J

RUNS FASTER

SETS EASIER

SEALS SECURELY

DRILLS OUT QUICKLY

McCULLOUGH

BRIDGE

PLUGS

McCullough *TOOL COMPANY*

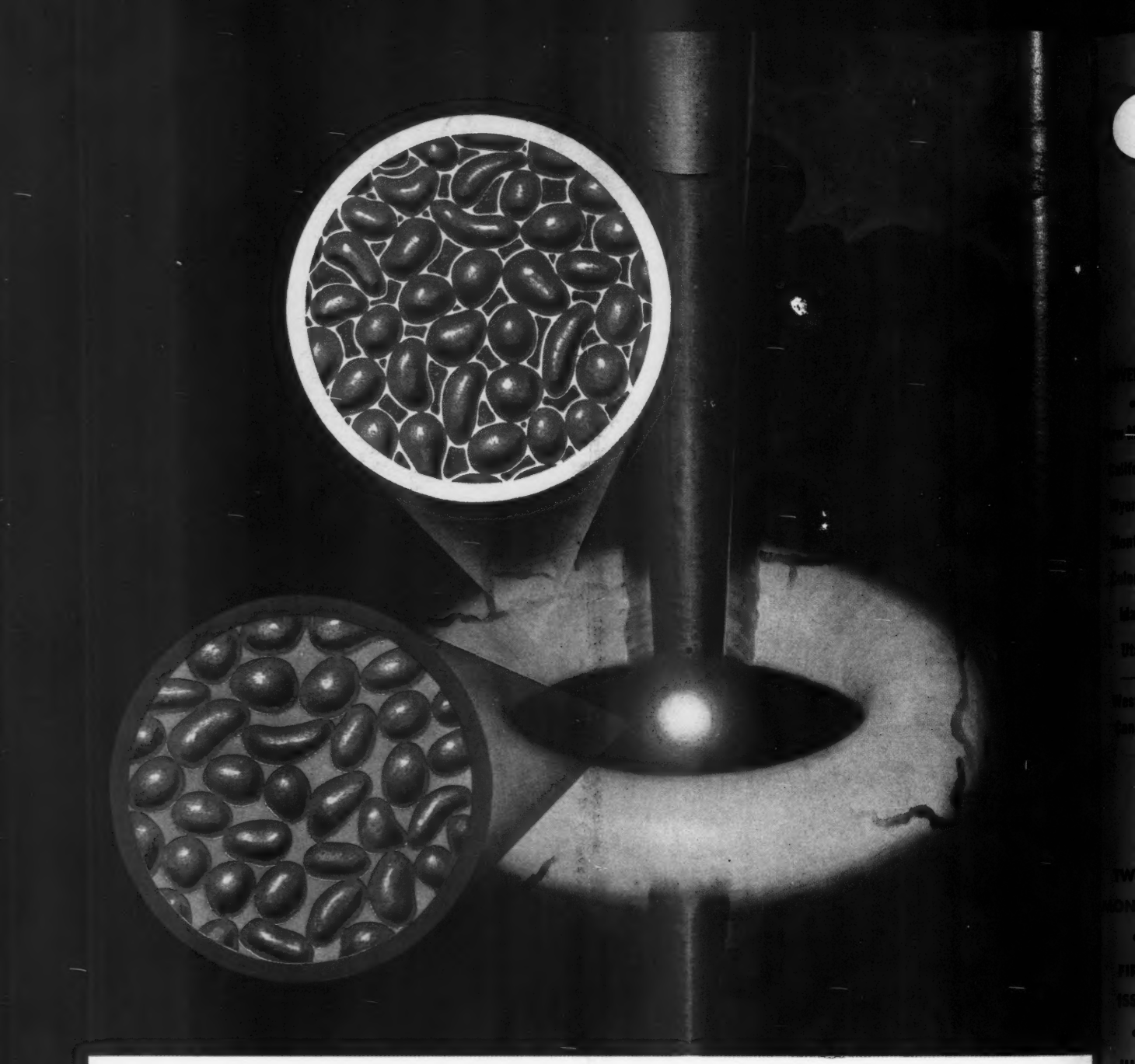
LOS ANGELES • HOUSTON • EDMONTON *Cable Address:* MACTOOL

Here's the answer for a truly efficient, all-purpose bridge plug — one so simply constructed, with no moving parts, that it will not fail mechanically — so positive in sealing action that you get a leak-proof seal under hydrostatic pressures as high as 13,000 psi — yet so versatile it will successfully accomplish the most difficult plugging operations as well as the easiest.

The McCullough Bridge Plug is an explosive-expansion plug made of drillable aluminum. It is set at the desired location by the power of expanding gases from within the plug. On permanent installations it will last as long as the pipe in which it is set. It is ideal for temporary plugging operations as it drills out quickly and easily with a rotary bit.

TAKE A LOOK AT THESE FEATURES

- Simple, one-piece, all-aluminum construction. Slips, reins, rubber packers and all hardened or moving parts that might impede drilling out have been eliminated.
- No slips to hang up or accidentally trip and set the plug while going in the hole.
- Makes a positive leak-proof seal under the heaviest hydrostatic or mechanical loads.
- Easier on the pipe than a slip-type plug.
- Because it's shorter and smaller in diameter it easily passes through tight spots, dog legs, etc., and saves rig time in running, locating and setting.
- Drills out easier and faster.
- Resists corrosion and electrolysis.
- Available in 37 sizes from 1¾" OD to 10½" OD for tubing, drill pipe, casing and in open hole in hard formations.



The Schlumberger Induction-Electrical Log Proves Production Possibilities

In all the vast areas where formations are soft to medium in hardness, and drilling muds are fresh, the Schlumberger Induction-Electrical Log most accurately portrays your production possibilities.

- A Short Normal Curve—recording the resistivity of the invaded zone largely flushed of its oil content.
- An Induction Curve—focused deep into the undisturbed zone of each successive formation—thick or thin.

Both measurements are invaluable to reservoir evaluation:

- To establish the presence of oil.
- To determine the percentage of saturation.

The Induction-Electrical Log was introduced by Schlumberger three years ago. Its superiority is now so widely accepted that 40% of all electrical logs run by oil companies in the United States and Canada are Induction-Electrical Logs.

Schlumberger—originator of logging and creator of its greatest advances—continues to lead the field with the Induction-Electrical Log.

AGAIN FIRST IN THE FIELD—FOREMOST IN RESEARCH

SCHLUMBERGER